

**DECLARATION OF
ON AMIR ISO
GOOGLE, LLC'S
OPPOSITION TO
PLAINTIFF'S MOTION
FOR CLASS
CERTIFICATION AND
APPOINTMENT OF CLASS
REPRESENTATIVES AND
CLASS COUNSEL**

**Unredacted Version of
Document Sought
to be Sealed**

QUINN EMANUEL URQUHART & SULLIVAN, LLP

Diane M. Doolittle (CA Bar No. 142046)
dianedoolittle@quinnemanuel.com
Sara Jenkins (CA Bar No. 230097)
sarajenkins@quinnemanuel.com
555 Twin Dolphin Drive, 5th Floor
Redwood Shores, CA 94065
Telephone: (650) 801-5000
Facsimile: (650) 801-5100

Andrew H. Schapiro (admitted *pro hac vice*)
andrewschapiro@quinnemanuel.com
Teuta Fani (admitted *pro hac vice*)
teutafani@quinnemanuel.com
191 N. Wacker Drive, Suite 2700
Chicago, IL 60606
Telephone: (312) 705-7400
Facsimile: (312) 705-7401

Stephen A. Broome (CA Bar No. 314605)
stephenbroome@quinnemanuel.com
Viola Trebicka (CA Bar No. 269526)
violatrebicka@quinnemanuel.com
Crystal Nix-Hines (Bar No. 326971)
crystalnixhines@quinnemanuel.com
Alyssa G. Olson (CA Bar No. 305705)
alyolson@quinnemanuel.com
865 S. Figueroa Street, 10th Floor
Los Angeles, CA 90017
Telephone: (213) 443-3000
Facsimile: (213) 443-3100

Josef Ansorge (admitted *pro hac vice*)
josefansorge@quinnemanuel.com
Xi ("Tracy") Gao (CA Bar No. 326266)
tracygao@quinnemanuel.com
Carl Spilly (admitted *pro hac vice*)
carlspilly@quinnemanuel.com
1300 I Street NW, Suite 900
Washington D.C., 20005
Telephone: (202) 538-8000
Facsimile: (202) 538-8100

Jomaire Crawford (admitted *pro hac vice*)
jomairecrawford@quinnemanuel.com
51 Madison Avenue, 22nd Floor
New York, NY 10010
Telephone: (212) 849-7000
Facsimile: (212) 849-7100

Jonathan Tse (CA Bar No. 305468)
jonathantse@quinnemanuel.com
50 California Street, 22nd Floor
San Francisco, CA 94111
Telephone: (415) 875-6600
Facsimile: (415) 875-6700

Attorneys for Defendant Google LLC

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA, OAKLAND DIVISION

CHASOM BROWN, WILLIAM BYATT,
JEREMY DAVIS, CHRISTOPHER
CASTILLO, and MONIQUE TRUJILLO,
individually and on behalf of all similarly
situated,

Plaintiffs,

v.

GOOGLE LLC,
Defendant.

Case No. 4:20-cv-03664-YGR-SVK

**DECLARATION OF ON AMIR IN
SUPPORT OF GOOGLE, LLC'S
OPPOSITION TO PLAINTIFF'S MOTION
FOR CLASS CERTIFICATION AND
APPOINTMENT OF CLASS
REPRESENTATIVES AND CLASS
COUNSEL**

Judge: Hon. Yvonne Gonzalez Rogers
Hearing Date: September 20, 2022
Hearing Time: 2:00 p.m..

1 I, On Amir, declare as follows:

2 1. Counsel for Defendant Google, LLC retained me to provide expert analysis and, if
3 requested, expert testimony in this matter.

4 2. I submit this declaration in support of Google's Opposition to Plaintiff's Motion for
5 Class Certification.

6 3. Attached as Exhibit 1 is a true and correct copy of the Expert Report of Professor On
7 Amir, dated April 15, 2022. The opinions I provided therein are true and correct to the best of my
8 knowledge.

9 4. Attached as Exhibit 2 is a true and correct copy of the Rebuttal Report of Professor
10 On Amir, dated May 20, 2022. The opinions I provided therein are true and correct to the best of
11 my knowledge.

12 5. Attached as Exhibit 3 is a true and correct copy of the Supplemental Report of
13 Professor On Amir, dated June 30, 2022. The opinions I provided therein are true and correct to the
14 best of my knowledge.

15
16 I declare under penalty of perjury of the laws of the United States that the foregoing is true
17 and correct. Executed in Tel Aviv, Israel on July 28, 2022.


18
19 By 
20 On Amir

EXHIBIT 1

**Redacted Version of
Document Sought to
be Sealed**

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**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

CHASOM BROWN, *et al*, individually
and on behalf of all others similarly
situated,

Plaintiffs,

v.

GOOGLE LLC,

Defendant.

Case No. 5:20-cv-03664-YGR

EXPERT REPORT OF PROFESSOR ON AMIR

APRIL 15, 2022

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I. EXECUTIVE SUMMARY

1. Based on my experience, the materials I reviewed in this matter, and the studies I designed and conducted in this case, I have reached the following opinions:

Opinion 1 (See Section V)

2. Literature shows that consumer preferences vary when it comes to internet browsers and browser features.¹ This variation in preferences is dependent on the context and scenario, such as *which* people or entities have access to consumer information, *what* types of consumer information people or entities have access to, and *how* people or entities use this consumer information. Therefore, to evaluate consumer understanding, perceptions, and expectations specific to the facts of this case, and to evaluate whether and to what extent consumers' understanding, perceptions, and expectations affect their likelihood of using a specific internet browser or browser feature, I designed and conducted empirical studies to address my assignment in a way that is consistent with the facts and context relevant to it.

Opinion 2 (See Section VI)

3. I designed and conducted my Consumer Perceptions and Expectations Study to assess whether and to what extent users expect different types of entities to receive or to not receive data (such as IP address, URLs of the sites users visit, and cookies) when they visit websites while in private browsing mode.² Users' perceptions and expectations were assessed after viewing the private browsing splash screens for Chrome, Safari, or Firefox, as well as the "Learn More" pages that are linked to the Chrome and Firefox private browsing splash screens.
4. In this study, my target population consists of 500 adults residing in the US who use a private browsing mode. Respondents were assigned to one of three groups (with a minimum of 200 respondents in the Chrome group, a minimum of 50 respondents in the Safari group, and a minimum of 50 respondents in the Firefox group) based on their answers to the screening question regarding the internet browser(s) they currently use to browse the internet.³ Respondents were then presented with the private browsing splash

¹ See **Section V** for a review of the literature.

² See footnote 11 in **Section III** for rationale on the types of data tested.

³ QS7, "Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use? (*Select all that apply*).” See **Appendix F.1**.

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screens for Chrome, Safari, or Firefox, as well as with the “Learn More” pages that are linked to the Chrome (for those in the Chrome group) and Firefox (for those in the Firefox group) private browsing splash screens. Respondents were asked to express their understanding of whether and to what extent the three enumerated entities receive or do not receive data (such as IP address, URLs of the sites visited, and cookies) when they visit websites while in private browsing mode. The types of entities were companies that provide analytics and advertising services to websites visited, internet service providers, or companies that own the websites visited.

5. My Consumer Perceptions and Expectations Study shows that, overall, respondents expect that companies that provide analytics and advertising services to websites visited, internet service providers, and companies that own the websites visited *receive* data from their private browsing session (such as IP address, URLs of the sites visited, and cookies). [REDACTED] of the respondents in the Chrome group ([REDACTED]) expect that companies that provide analytics and advertising services to websites visited, internet service providers, and companies that own the websites visited *probably* or *do* receive the data from their private browsing session.
6. [REDACTED] of respondents in the Chrome group expect that companies that provide analytics and advertising services to websites visited, internet service providers, and companies that own the websites visited *do not* receive the data from their private browsing session. Even including respondents who answered *probably do not* receive, [REDACTED] of respondents in the Chrome group expect that these entities *do not* or *probably do not* receive the data from their private browsing session. Results are similar when analyzing responses from respondents across all three internet browsers.
7. These findings are not consistent with Plaintiffs’ claim that “Class members reasonably believed that their data would not be collected by Google and that Google would not intercept their communications when they were in ‘private browsing mode.’”⁴

⁴ Third Amended Complaint, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, February 3, 2022 (“TAC”), ¶ 3.

Opinion 3 (See Section VII)

8. I designed and conducted my Interpretation Study to assess whether and to what extent users expect Google to receive or to not receive URLs of the sites users visit, IP addresses, and cookies placed on users' browsers during their Incognito session after reviewing the Incognito Splash Screen and "Learn More" page, as well as the Google Privacy Policy and Chrome Privacy Notice, the New Account Creation Agreement, or the Consent Bump Agreement for some respondents.^{5,6}
9. In this study, my target population consists of 1,000 adults residing in the US who use a private browsing mode. Respondents were randomly assigned to one of four groups with a target of 250 respondents per group. The four groups were presented with different sets of screens and policies: "Splash Screen Only," "Splash Screen with Policies (Highlighted)," "Splash Screen with New Account Creation Agreement," and "Splash Screen with Consent Bump Agreement and FAQ Page." All respondents were shown the Incognito Splash Screen and the "Learn More" page that is linked to the Incognito Splash Screen. Based on which group they were assigned to, respondents were also shown either no additional documents (Splash Screen Only group), the Google Privacy Policy and the Chrome Privacy Notice (with and without highlights) (Splash Screen with Policies (Highlighted) group), the New Account Creation Agreement (Splash Screen with New Account Creation Agreement group), or the Consent Bump Agreement and FAQ Page (Splash Screen with Consent Bump Agreement and FAQ Page). Each respondent was asked a series of three scale questions. These questions required respondents to express their understanding of whether Google receives or does not receive three types of data from their Incognito mode internet browsing session: URLs of the sites visited, IP addresses, and cookies placed on the browser.
10. My Interpretation Survey results show that, overall, respondents expect that Google receives the URLs of the sites visited, IP addresses, and cookies placed on the browser while in Incognito mode. [REDACTED] of respondents in each group ([REDACTED]) expect that Google *probably* receives or *does* receive URLs of the sites visited while in Incognito

⁵ See footnote 11 in **Section III** for rationale on the types of data tested.

⁶ See **Section IV.C** for descriptions of the policies and disclosures.

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mode, [REDACTED] of respondents in each group ([REDACTED]) expect that Google *probably* receives or *does* receive IP addresses while in Incognito mode, and [REDACTED] of respondents in each group ([REDACTED]) expect that Google *probably* receives or *does* receive cookies placed on the browser while in Incognito mode.

11. In each group, [REDACTED] of respondents expect that Google *does not* receive URLs of the sites visited while in Incognito mode, [REDACTED] of respondents expect that Google *does not* receive IP addresses while in Incognito mode, and [REDACTED] of respondents expect that Google *does not* receive cookies placed on the browser while in Incognito mode. Even including respondents who answered *probably does not* receive, [REDACTED] respondents expect that Google *does not* or *probably does not* receive the URLs of sites visited while in Incognito mode. The percentage of respondents that expect that Google *does not* or *probably does not* receive (1 or 2 on the scale) IP addresses is [REDACTED] and for cookies placed on the browser is [REDACTED].
12. These findings are not consistent with Plaintiffs' claim that "[n]othing in Google's Privacy Policy or Incognito Screen leads users to believe that during private browsing Google continues to persistently monitor them [...] In fact, when the Privacy Policy and Incognito Screen are read together, the user necessarily reaches the opposite conclusion."⁷

Opinion 4 (See Section VIII)

13. I designed and conducted my Likelihood of Use Study to assess whether and to what extent modification of certain language on the Incognito Splash Screen and the "Learn More" page that address Plaintiffs' criticisms of those documents—namely, that these documents should have identified Google as an entity that may receive data when an Incognito user visits a website using Google services—impacts users' likelihood of using Chrome in Incognito mode for private browsing.
14. Because this survey is about users' actual behavior and because context matters, I presented a scenario to simulate the browsing experience. This scenario was the same across all respondents. This scenario asked respondents to imagine that they were researching online about a sensitive topic and they decided to browse the web in private browsing mode.

⁷ TAC, ¶ 57.

15. In this study, my target population consists of 1,000 adults residing in the US who use a private browsing mode. I used a test/control experimental design, where respondents were randomly assigned to either the Actual Language group or the Alternative Language group, with a target of 500 respondents in each group. Following the presentation of the scenario, respondents were shown either the actual version of the Incognito Splash Screen (Actual Language group), or the alternative version with modification of certain language (Alternative Language group). Specifically, in the alternative version of the Incognito Splash Screen, the introductory sentence, “Now you can browse privately, and other people who use this device won’t see your activity” was modified to say, “Now you can browse privately, which means other people who use this device won’t see your activity.” Similarly, under the heading, “Your activity might still be visible to,” I added a bullet that stated: “Companies that provide services to websites you visit (such as Google Analytics, Adobe Analytics, Google Ad Manager, Facebook Ads).”⁸ These language modifications address Plaintiffs’ allegations as to how the actual language in the Incognito Splash Screen allegedly is misleading. Respondents that clicked the link to the “Learn More” page on the Incognito Splash Screen saw either actual or alternative language depending on the condition to which they were assigned. After viewing the stimuli, respondents were asked how likely or unlikely they were to use the Chrome browser in Incognito mode to do online research on a sensitive topic.
16. My Likelihood of Use Study results show that for online research on a sensitive topic, the average respondent would use Chrome in Incognito mode to do online research on a sensitive topic after viewing the Incognito Splash Screen and for some respondents, the “Learn More” page. Importantly, modifying certain language on the Incognito Splash Screen and the “Learn More” page (*i.e.*, the second phrase in the introductory sentence and information regarding the list of entities to which users’ activity might still be visible) to address Plaintiffs’ criticisms regarding what those documents *should* disclose *has no statistically significant impact* on respondents’ likelihood of using Chrome in Incognito mode to do online research on a sensitive topic. This finding shows that including language that Plaintiffs claim “Google could have disclosed on [the] Incognito Screen [to describe]

⁸ See **Appendices H.1 and H.2.**

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that Google would track users and collect their data while they were browsing privately”⁹
 does not have an impact on respondents’ likelihood of using Chrome.

II. QUALIFICATIONS

17. I am the Wolfe Family Presidential Endowed Chair in Life Sciences, Innovation, and Entrepreneurship, and Professor of Marketing at the Rady School of Management, University of California, San Diego. I have been a professor of marketing for the past nineteen years. I received my PhD in Management Science and Marketing from the Massachusetts Institute of Technology in 2003. From 2003 to 2005, I was an Assistant Professor of Marketing at Yale University. In 2005, I moved to help found the Rady School of Management at UC San Diego, where I was the first founding member of the marketing department and have served as an associate dean of academic programs.
18. I have taught Marketing Management, Pricing, Consumer Behavior, Business Analytics, Marketing Strategy, Market Research, Applied Market Research, Lab to Market, and Data Driven Decision Making at the MBA and Executive levels, as well as many specific programs for major corporations (both nationally and internationally). I have also taught MBA Marketing Management courses at Northwestern University’s Kellogg School of Management, Yale School of Management, Recanati School of Business of Tel Aviv University, IDC Herzelia, and Cheung Kong Graduate School of Business in Shanghai, China.
19. I have consulted with numerous companies in many industries on topics relating to market analysis, market research, business strategy, customer insights, branding, customer analysis, new product launches, pricing, promotions, and customer relationship management. I am also the Chief Behavioral Science Officer at Fiverr, Inc and serve on the advisory board of several companies.
20. I have published numerous highly cited and award-winning articles in leading marketing, management, and psychology journals, and I am often invited to lecture in leading business school and professional meetings. I have also designed and conducted hundreds of consumer surveys, both for my academic research and consulting work. My professional

⁹ TAC, ¶ 53.

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qualifications are described further in my curriculum vitae, which is attached as **Appendix A**.

21. I have also served as an expert witness in several cases, including consumer protection class actions. **Appendix B** lists matters where I have testified as an expert witness. I have also been retained on several cases that either settled or are ongoing.
22. My rate of compensation for this assignment is \$900 per hour. Individuals at Analysis Group, Inc., an economic and litigation consulting firm headquartered in Boston, Massachusetts, performed part of the work for this assignment under my direction. No compensation is contingent upon the outcome of this research or of the case.

III. ASSIGNMENT

23. I have been asked by Counsel for Google LLC (“Google”) to evaluate the understanding, perceptions, and expectations of users with respect to issues relevant to the matter (see **Section IV**). In accordance with my assignment, I conducted a series of surveys specific to the facts of this matter.¹⁰ In particular, I was asked to assess the following:
 - a. Whether and to what extent users expect different types of entities to receive or to not receive data (such as IP address, URLs of the sites users visit and cookies)¹¹ when they visit websites while in private browsing mode after viewing the private browsing splash screens for Chrome, Safari, or Firefox, as well as the “Learn More” pages that are linked to the Chrome and Firefox private browsing splash screens. (**Consumer Perceptions and Expectations Study**, see **Section VI**.)
 - b. Whether and to what extent users expect Google to receive or to not receive URLs of the sites users visit, IP addresses, and cookies placed on the browser during their Incognito session after reviewing the Incognito Splash Screen and “Learn More” page, as well as the Google Privacy Policy and Chrome Privacy

¹⁰ Surveys are widely utilized in academic research and in litigation. See Lavrakas, Paul J., *Encyclopedia of Survey Research Methods*, SAGE Publications, Inc., 2008, p. 33; Ben-Shahar, Omri and Lior J. Strahilevitz, “Interpreting Contracts Via Surveys and Experiments,” *New York University Law Review*, Vol. 92, 2017, pp. 1753-1827 (“Ben-Shahar and Strahilevitz (2017)”), pp. 1769-1771.

¹¹ I am informed that URLs of the sites visited, IP address, and cookies broadly cover the data types at issue in this case, and these three types of data are relatively understandable concepts for survey respondents (see **Section IV.A** for the list of data types at issue). Further, testing too many types of data may cause fatigue for respondents. Therefore, testing these three types of data is appropriate for my assignment.

Notice, the New Account Creation Agreement, or the Consent Bump Agreement for some respondents. (**Interpretation Study**, see **Section VII.**)

- c. Whether and to what extent modification of certain language on the Incognito Splash Screen and “Learn More” page impacts users’ likelihood of using Chrome in Incognito mode for private browsing. (**Likelihood of Use Study**, see **Section VIII.**)

24. In designing the surveys and analyzing the results, I follow professional standards and best practices of conducting survey research, both generally and specifically for the purpose of litigation.^{12,13}
25. I may amend or supplement my opinions should additional information be made available following the submission of my report through incremental document and data production or deposition testimony. In formulating my opinions, I considered the materials cited in this report and listed in **Appendix C**.

¹² My survey approach adhered to the survey research guidelines outlined by the Federal Judicial Center in the “Reference Guide on Survey Research” and in the “Manual for Complex Litigation,” sources that are foundational for litigation survey design. Diamond, Shari S., “Reference Guide on Survey Research,” in *Reference Manual on Scientific Evidence*, Third Edition, 2011, The National Academies Press, pp. 359-423 (“Diamond (2011)”); *Manual for Complex Litigation*, Fourth Edition, Federal Judicial Center, 2004 (“Manual for Complex Litigation”).

The Manual for Complex Litigation describes the following criteria for a reliable study: (1) the population was properly chosen and defined; (2) the sample chosen was representative of that population; (3) the survey was conducted by qualified people following proper interview procedures; (4) the questions asked were clear and not leading; (5) the data gathered were accurately reported; (6) the data were analyzed in accordance with accepted statistical principles; and (7) the process was conducted to ensure objectivity. Manual for Complex Litigation, p. 103.

To ensure objectivity and to avoid “demand artifacts” (*i.e.*, elements of the methodology or survey that may lead the respondent to answer in a particular way), I followed best practices in survey design. My survey followed “double-blind” methodology where both respondents and the survey administrator (in this case, Dynata, a reputable survey vendor) were not provided information on the purpose or sponsor of this study. By following a “double-blind” methodology, I avoided respondents answering in the way that the respondent thinks the survey designer “demanded.” I also minimized demand artifacts through my design of the survey questions and answers. For example, I asked questions in a double-sided manner (*e.g.*, “how likely or unlikely...”) where appropriate to avoid leading respondents to answer one way over another. Furthermore, I mitigated order effects by rotating or randomizing the order of questions and answer alternatives where appropriate, as well as randomizing the order of stimuli. Sawyer, Alan G., “Demand Artifacts in Laboratory Experiments in Consumer Research,” *Journal of Consumer Research*, Vol. 1, No. 4, 1975, pp. 20-30; Diamond (2011), pp. 395-396, 410-411. *See also*, Miller, Jeff, “Online Marketing Research,” in *The Handbook of Marketing Research*, Grover, Rajiv and Marco Vriens, eds., Sage Publications, 2006, pp. 110-131.

¹³ Pretesting is recommended “as a way to increase the likelihood that questions are clean and unambiguous.” Diamond (2011), p. 388. Under my direction, pretests were conducted for my surveys from March 4th, 2022 to March 10th, 2022. Respondents were asked to complete the survey while “thinking out loud” and to answer a set of follow-up questions about the survey experience. 10 respondents were interviewed for each of my surveys. Based on the results of pretesting, which are shown in more detail in **Appendix E**, I was able to refine each of my surveys.

In response to confusion about whether the hyperlink worked when respondents clicked on “Learn more” on the private browsing splash page, I added a pop-up text box to the survey when the hyperlink was clicked that says “You will be taken to the next page in [X] seconds” where X mirrors the number of seconds remaining in the 30-second time for each page. These stimuli are discussed in more detail in **Sections IV.C, VI.A, VII, A., and VIII.A** below. Additionally, in response to issues with scrolling while using the zoom feature available for my stimuli, I added an instruction to “please drag the image to scroll.”

IV. BACKGROUND**A. Allegations**

26. I understand that Chasom Brown, William Byatt, Jeremy Davis, Christopher Castillo, and Monique Trujillo (collectively “Plaintiffs”), on behalf of a proposed Class, allege in the Third Amended Complaint (“TAC”) that, among other things, Google “intercepted users’ private browsing communications to collect personal and sensitive information concerning millions of Americans, without disclosure and consent” while users are in a “private browsing mode.”¹⁴
27. Plaintiffs acknowledge that they understood Google collected the At-Issue Data when they were browsing the web when in a mode other than private browsing mode. Indeed, they allege that “[i]t is common knowledge that Google collects information about the web-browsing activity of users who are not in ‘private browsing mode’” and that “[i]t is also common knowledge that Google causes targeted advertisements to be sent based on that information.”¹⁵ Plaintiffs also affirmed this belief at their depositions.¹⁶
28. I understand that, because Plaintiffs acknowledge that users generally understand that Google collects the At-Issue Data when they were in a mode other than private browsing mode, a key issue in the case is whether certain of Google’s statements in its disclosures

¹⁴ TAC, ¶¶ 1, 4.

¹⁵ TAC, ¶ 163.

¹⁶ “Q. How do you know that Google collects information and monetizes that information? A. It’s common knowledge, I think. I don’t know how to say that more specifically, but I think everyone knows that that’s Google’s business model.” Zoom Videotaped Deposition of William Byatt, December 20, 2021 (“Byatt Deposition”), at 153:15-21; “Q. And do you agree, as someone who works in the space that you work in, that it is — it’s common knowledge that Google collects information about web browsing activity when people are not in private mode? A. Yeah, I would say that’s a fair statement.” Video-Recorded Deposition of Jeremy Davis, January 7, 2022 (“Davis Deposition”), at 69:10-14; “I don’t assume privacy in, quote/unquote, ‘normal Chrome sessions.’ Why else would the incognito mode exist and why else would the Privacy Policy refer to it as the prescribed way to browse privately?” Davis Deposition, at 70:23-71:2; “It’s clear to me that when I’m searching Google in regular mode, and not Incognito mode, that you collect this data.” Videotaped Deposition of Christopher Castillo, February 8, 2022 (“Castillo Deposition”), at 70:12-14; “I understand when I am not in Incognito mode that Google will intercept my communications [...] it’s my understanding that Google collects that kind of data when I am not in Incognito mode, per the statements that are written in the Google Privacy Policy.” Castillo Deposition, at 100:3-25; “And because I understand that, hey, if I go do normal browsing, I’m doing normal browsing and I’m giving up data and...my data’s being collected, and that’s the deal we have.” Videotaped Deposition of Chasom Brown, January 13, 2022 (“Brown Deposition”), at 61:2-5; “I don’t hate the idea of data collection in normal Chrome browsing.” Brown Deposition, at 82:7-8; “I’m just using Google in normal mode, I think there is still quite a bit that’s being collected.” Brown Deposition, at 134:8-10; “[I]n general, I think targeted advertising is a good thing. And normal browsing mode, I think that, again, it’s I’ve given consent. We have a deal. I get the deal.” Brown Deposition, at 158:8-11; “Well, if I’m in regular mode, then I am aware that information is being collected.” Virtual Videoconference Video-Recorded Deposition of Monique Trujillo, February 11, 2022 (“Trujillo Deposition”), at 56:11-12; “I know that in regular mode I am consenting to Google Analytics collecting my information.” Trujillo Deposition, at 62:12-14.

led Class Members to believe that Google would not receive the At-Issue Data while users were in a private browsing mode.

29. Plaintiffs allege that “[b]ased on Google’s representations, Plaintiffs and Class members reasonably believed that their data would not be collected by Google and that Google would not intercept their communications when they were in ‘private browsing mode.’”¹⁷ Plaintiffs allege that Google intercepted and collected data “through means that include Google Analytics, Google ‘fingerprinting’ techniques, concurrent Google applications and processes on a consumer’s device, and Google’s Ad Manager.”¹⁸
30. Plaintiffs state that

Whenever a user (even a user in “private browsing mode,” including Plaintiffs and Class members) visits a website that is running Google Analytics or Google Ad Manager, Google’s software scripts on the website surreptitiously direct the user’s browser to send a secret, separate message to Google’s servers in California. This message contains:

- a. The “GET request” sent from the user’s computer to the website.¹⁹ [...]
- b. The IP address of the user’s connection to the internet;²⁰
- c. Information identifying the browser software that the user is using, including any “fingerprint” data;²¹
- d. Any “User-ID” issued by the website to the user, if available [...];²²
- e. Geolocation of the user, if available [...];²³ and

¹⁷ TAC, ¶ 3.

¹⁸ TAC, ¶ 8.

¹⁹ The Complaint defines “GET request” as, “When an individual internet user visits a web page, his or her browser sends a message called a ‘GET request’ to the webpage’s server. The GET request serves two purposes: it first tells the website what information is being requested and then instructs the website to send the information back to the user [...] The GET request also transmits a refer[r]er header containing the URL information of what the user has been viewing and requesting from websites online.” TAC, ¶ 63. I am informed that “URLs of the sites visited” is a more understandable concept for survey respondents. Thus, I presented the term, “URLs of the sites you visit,” with the following definition: “The web addresses of the webpages you visited using the browser.” **Appendices F.1 and F.2.**

²⁰ The Complaint defines “IP address” as, “Each device, when connected to the Internet, is assigned a unique IP address by the Internet Service Provider (ISP) that is providing the internet connection. IP addresses may change over time but often do not. In many cases, an ISP will continue to assign the same IP address to the same device.” TAC, ¶ 63, footnote 16. The definition I presented in my surveys is, “Every device connected to the Internet is assigned a number known as an Internet protocol (IP) address. An IP address can often be used to identify the location from which a device is connecting to the Internet.” **Appendices F.1 and F.2.**

²¹ The Complaint defines “fingerprint data” as, “Because every device and application installed has small differences, images, digital pixels, and fonts display differently for every device and application, just ever so slightly. By forcing a consumer to display one of its images, pixels, or fonts, online companies such as Google are able to ‘fingerprint’ their users and consumers across the internet.” TAC, ¶ 100.

²² The Complaint defines “User-ID” as, “The User-ID feature allows Websites to ‘generate [their] own unique IDs, consistently assign IDs to users, and include these IDs wherever [the Websites] send data to Analytics.’” TAC, ¶ 69. *See also*, “About the User-ID Feature,” *Google Analytics Help*, available at <https://support.google.com/analytics/answer/3123662?hl=en&ref_topic=3123660>, accessed on March 18, 2022.

²³ The Complaint describes “geolocation” as information on the location of a user’s device which can be captured by Google via any device that uses its software (Android, Google Home, Nest, etc.). *See* TAC, ¶ 105-108.

- f. Information contained in “Google cookies,” which were saved by the user’s web browser on the user’s device at any prior time.²⁴

31. I collectively refer to these data as “At-Issue Data.”
32. Plaintiffs assert that Plaintiffs’ and Class members’ expectation of privacy is based on “Google’s own statements regarding ‘private browsing modes.’”²⁵
33. Plaintiffs make these allegations on behalf of a class (“Proposed Class”) defined as:

Class 1 – All Chrome browser users with a Google account who accessed a non-Google website containing Google tracking or advertising code using such a browser and who were (a) in “Incognito mode” on that browser and (b) were not logged into their Google account on that browser, but whose communications, including identifying information and online browsing history, Google nevertheless intercepted, received, or collected from June 1, 2016 through the present (the “Class Period”).

Class 2 – All non-Chrome browser users with a Google account who accessed a non-Google website containing Google tracking or advertising code using any such browser and who were (a) in “private browsing mode” on that browser, and (b) were not logged into their Google account on that browser, but whose communications, including identifying information and online browsing history, Google nevertheless intercepted, received, or collected from June 1, 2016 through the present (the “Class Period”).²⁶

B. Private Browsing Mode

1. Incognito Mode of Chrome

34. Chrome is an internet browsing software application developed by Google.²⁷ Although it is one of many browser options (with some alternatives being Safari, Firefox, Edge, Opera, Brave, and DuckDuckGo), Chrome is the most widely used internet browser across all device types (*e.g.*, desktop, tablet, and mobile) as of 2022.²⁸ “Incognito” mode is one of the five browsing modes available for Chrome users to choose from and is the private

²⁴ The Complaint defines cookies as “A ‘cookie’ is a piece of code that records information regarding the state of the user’s system (*e.g.*, username; other login information; items added to a “shopping cart” in an online store) or information regarding the user’s browsing activity (including clicking particular buttons, logging in, or recording which pages were visited in the past). Cookies can also be used to remember pieces of information that the user previously entered into form fields, such as names, addresses, passwords, and payment card numbers.” TAC, ¶ 70, footnote 19. The definition I presented in my surveys is, “A small file containing a string of characters that is sent to your computer when you visit a website. When you visit the site again, the cookie allows that site to recognize your browser. Cookies may store user preferences and other information.” **Appendices F.1 and F.2.**

²⁵ TAC, ¶¶ 39-62.

²⁶ TAC, ¶ 192.

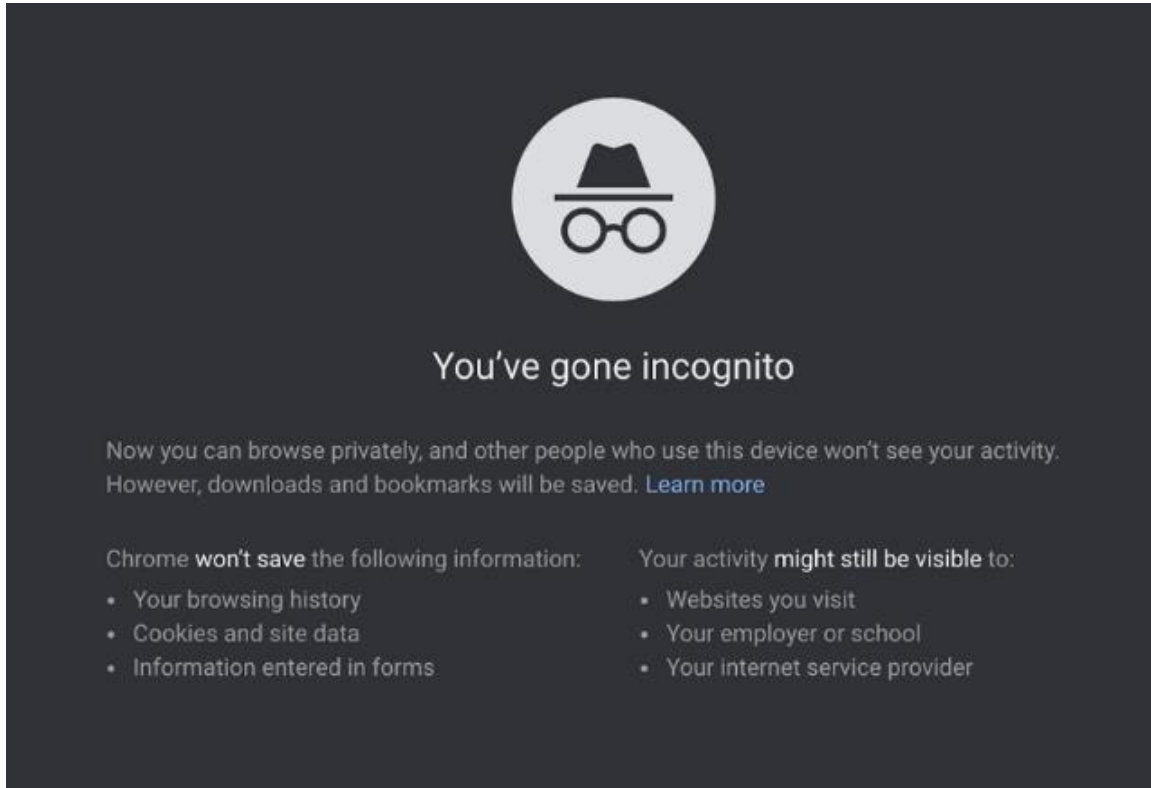
²⁷ “Google Chrome - Home,” *Google*, available at <<https://www.google.com/chrome/>>, accessed on March 18, 2022.

²⁸ “Browser Market Share Worldwide,” *StatCounter*, available at <<https://gs.statcounter.com/browser-market-share#yearly-2009-2022>>, accessed on March 18, 2022.

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browsing mode of the Chrome browser.^{29,30} **Figure 1** below shows what was displayed when a user initiated Incognito mode on Chrome during the majority of the class period (this initial display is also known as a “splash screen”).^{31, 32}

Figure 1. Chrome Browser Incognito Mode Splash Screen



35. As **Figure 1** shows, the Incognito Splash Screen states that, in Incognito mode, Chrome will not save the user’s browsing history, cookies and site data, or information entered in forms. Google further explains in the Chrome Privacy Notice that, after the user closes the Incognito session, Chrome also will not save data including snapshots of visited pages, or records of downloads locally on the user’s browser.³³

²⁹ The five browsing modes are (1) basic browser mode, (2) sign in without sync enabled, (3) sign in with Sync enabled, (4) Incognito mode, and (5) guest mode. See “Chrome Privacy Notice,” May 20, 2020, *Google*, available at <<https://www.google.com/chrome/privacy/archive/20200520/>>. See also, **Appendices N.1 and N.2**.

³⁰ “Browse in Private,” *Google*, available at <<https://support.google.com/chrome/answer/95464?hl=en>>, accessed on March 18, 2022.

³¹ TAC, ¶ 52.

³² Shortly before the Plaintiffs filed the Complaint, Google launched Chrome version 83 which blocked third-party cookies by default in Incognito mode, and added a toggle to the “splash screen” informing users that when it was on, sites could not use cookies that track them across the web, but that features on sites may break. See TAC, ¶ 139. See also, “M83 Chrome Enterprise Release Notes,” May 19, 2020, *Chrome Enterprise*, available at <<https://support.google.com/chrome/a/answer/10314655#83>>. I chose to use the version of the Incognito Splash Screen that existed for the majority of the class period, and that was used in the Complaint.

³³ “Chrome Privacy Notice,” May 20, 2020, *Google*, available at <<https://www.google.com/chrome/privacy/archive/20200520/>>.

36. The Chrome Privacy Notice also explains that in Incognito mode, “Chrome won’t share existing cookies with sites [users] visit in incognito [...] mode.”³⁴ Although “[s]ites may deposit new cookies on [the user’s] system [...], [...] they’ll only be stored and transmitted until [the user] close[s] the[ir] last incognito window,” at which point they are automatically deleted from the browser.^{35,36} While browsing in Incognito, users “have access to information from [their] existing profile, such as suggestions based on [their] browsing history and saved passwords.”³⁷
37. The Incognito Splash Screen and other Google disclosures state that, in Incognito mode, users’ activity is not completely private and may still be visible to websites they visit, their employer or school, or their internet service provider. (See **Figure 1.**) Google’s Help Center article titled “How private browsing works in Chrome” explains that users’ activity may also still be visible to ads and resources used on the websites they visit, websites they sign in to, or search engines.³⁸

2. Private Browsing Mode of Other Browsers

38. Other popular internet browsers also provide private browsing modes. For example, Safari and Firefox, the second and third most widely used internet browsers respectively as of February 2022, also each have their own private browsing modes.³⁹ **Figure 2** and **Figure 3** below show the splash screens displayed when a user initiates private browsing mode on Safari’s browser or Firefox’s browser.

³⁴ “Chrome Privacy Notice,” May 20, 2020, *Google*, available at <<https://www.google.com/chrome/privacy/archive/20200520/>>. *See also*, **Appendices N.1 and N.2**.

³⁵ “Chrome Privacy Notice,” May 20, 2020, *Google*, available at <<https://www.google.com/chrome/privacy/archive/20200520/>>. *See also*, **Appendices N.1 and N.2**.

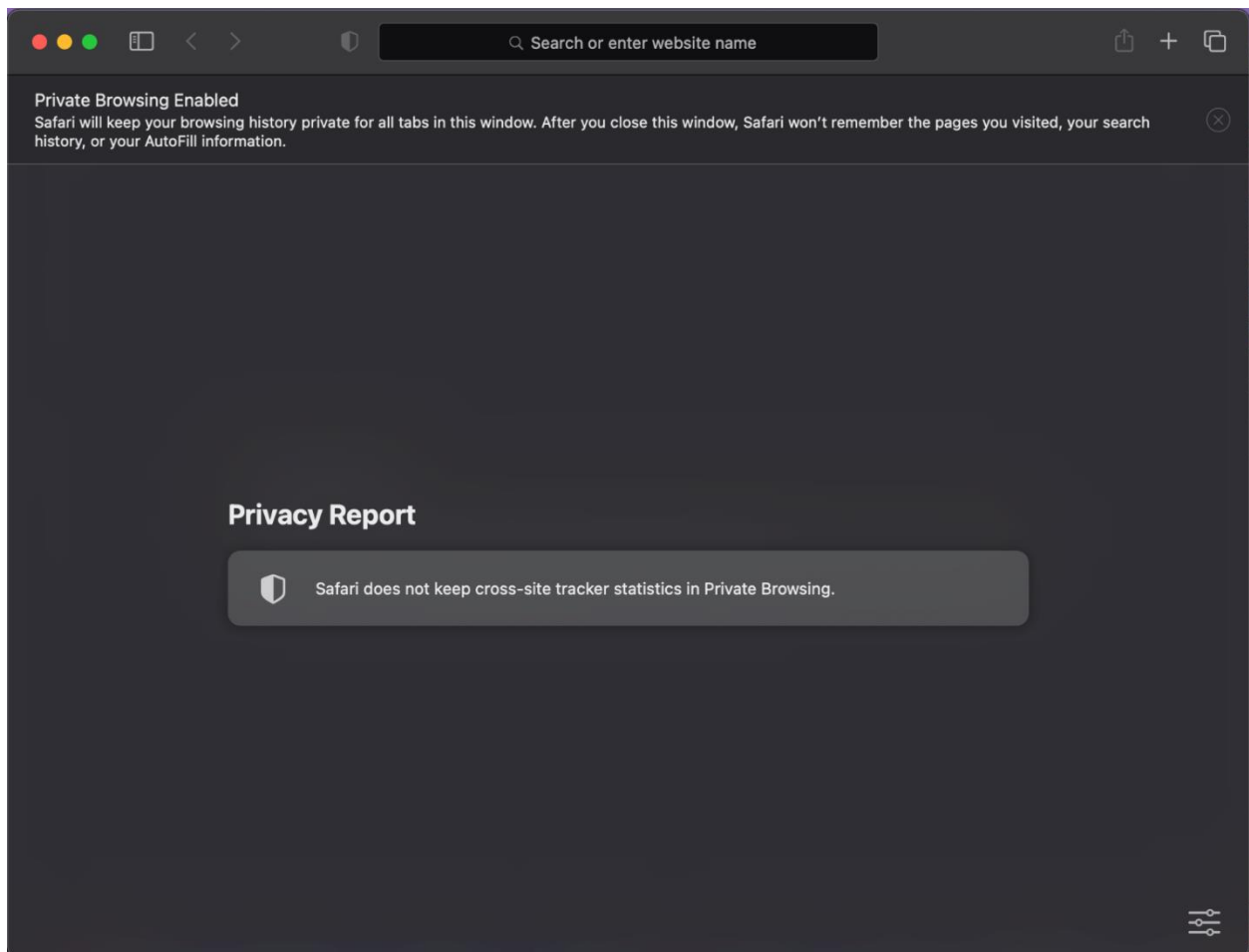
³⁶ “How Private Browsing Works in Chrome,” *Google*, available at <https://support.google.com/chrome/answer/7440301?hl=en&ref_topic=9845306>, accessed on March 18, 2022. *See also*, **Appendix I.1**.

³⁷ “Chrome Privacy Notice,” May 20, 2020, *Google*, available at <<https://www.google.com/chrome/privacy/archive/20200520/>>. *See also*, **Appendices N.1 and N.2**.

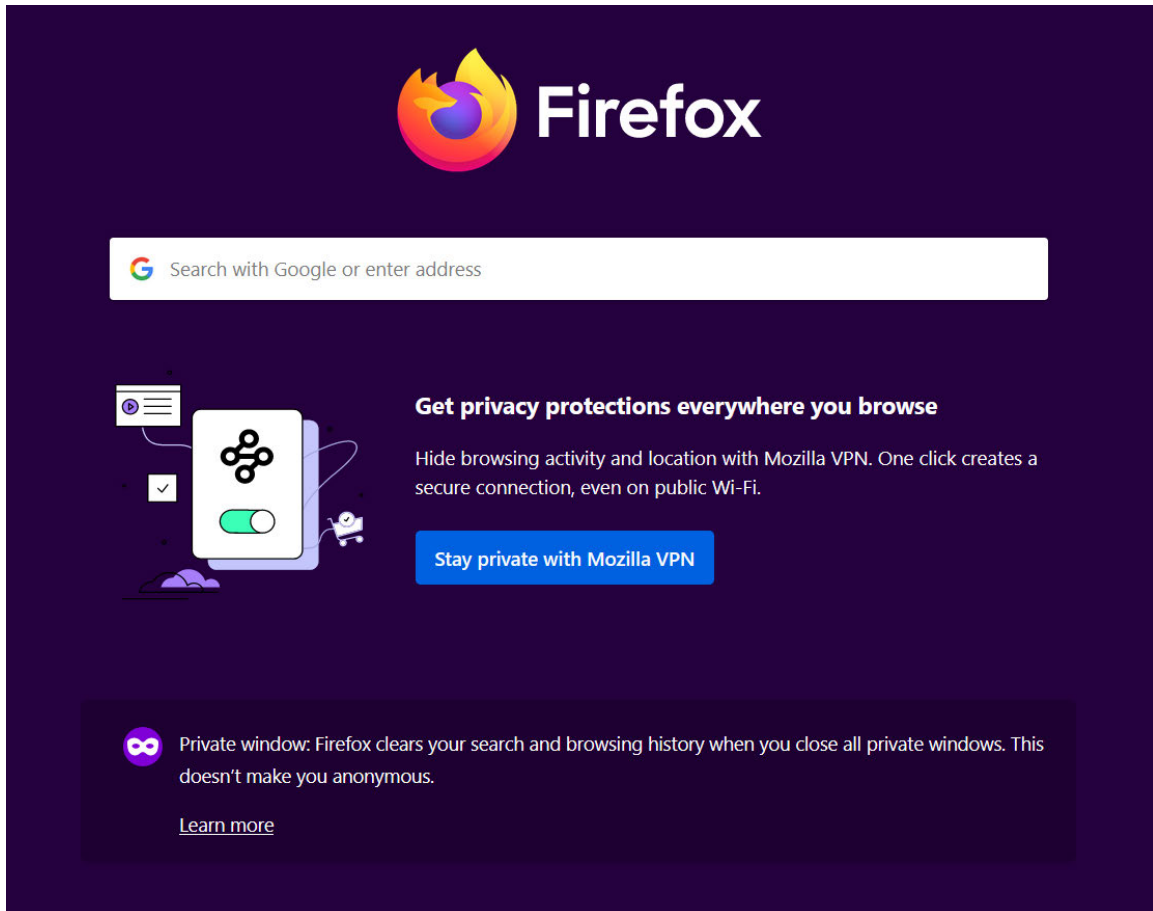
³⁸ “How Private Browsing Works in Chrome,” *Google*, available at <https://support.google.com/chrome/answer/7440301?hl=en&ref_topic=9845306>, accessed on March 18, 2022. *See also*, **Appendix I.1**.

³⁹ “Browser Market Share Worldwide,” *StatCounter*, available at <<https://gs.statcounter.com/browser-market-share#yearly-2009-2022>>, accessed on March 18, 2022.

Figure 2. Safari Browser Private Browsing Mode Splash Screen



39. The Private Browsing Splash Screen of Safari’s browser states that “Safari will keep your browsing history private for all tabs in this window. After you close this window, Safari won’t remember the pages you visited, your search history, or your AutoFill information.” (See **Figure 2.**)

Figure 3. Firefox Browser Private Browsing Mode Splash Screen

40. The Private Browsing Splash Screen of Firefox’s browser states “Private window: Firefox clears your search and browsing history when you close all private windows. This doesn’t make you anonymous.” (See **Figure 3**).

C. Relevant Policies and Disclosures

41. I am informed that the following policies and disclosures to the Class members are relevant in this case:
- a. ***Incognito Splash Screen:*** The Incognito Splash Screen appears when a user opens an Incognito browsing session in the Chrome browser. It provides information on the type of information that the user’s Chrome browser will not save in Incognito mode (as opposed to regular mode) and explains that Incognito mode does not conceal the user’s activity from certain types of entities.⁴⁰ (See **Figure 1** and **Section III.A.1**).
 - b. ***“Learn More” Page:*** The “Learn More” page is hyperlinked to the Incognito Splash Screen and provides additional information on “[h]ow private browsing works on Chrome” including that “other people who use the device won’t see your

⁴⁰ I am informed that the version of the Incognito Splash Screen that was used by Plaintiffs in the TAC is relevant for my report. TAC, ¶ 52. See also, **Appendix H.1**.

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history” and “[c]ookies and site data are remembered while you’re browsing, but deleted when you exit Incognito mode.” The page also explains that “[y]our activity, like your location, might still be visible to: [[w]ebsites you visit, including the ads and resources used on those sites[,] [w]ebsites you sign in to [...] [and] [s]earch engines.”⁴¹

- c. **Google Privacy Policy (“PP”)**: Google’s PP explains to users, among other things, the types of information Google collects and how the data is stored and used. Specifically, the PP explains the types of data Google receives, including unique identifiers, browser type and settings, device types and settings, operating system, mobile network information, application version number, IP address, system activity, and referrer URL, and how that data is stored depending on whether or not the user is signed-in to a Google Account. The PP also explains that Google uses this data to provide and improve its services, to provide personalized services, including content and ads, to measure performance, and to communicate with users.⁴²
- d. **Chrome Privacy Notice (“CPN”)**: The CPN describes features that are specific to Chrome, including the five browser modes: Basic browser mode, Sign-in mode, Sync mode, Incognito mode, and Guest mode. The CPN explains that “[y]ou can limit the information Chrome stores *on your system* by using incognito mode.” (emphasis added). It also explains that “Chrome won’t share existing cookies with sites you visit in incognito [...] mode. Sites may deposit new cookies on your system while you are in these modes, but they’ll only be stored and transmitted until you close the last incognito [...] window.”⁴³

⁴¹ I am informed that the version of the page that is linked to “Learn More” on the Incognito Splash Screen has changed over time. I understand from Counsel that the page titled, “How Private Browsing Works in Chrome” was linked to the version of the Incognito Splash Screen presented in the TAC for the majority of the Class Period. I am further informed that the versions of this page as of May 26, 2020 for desktop and July 6, 2020 for mobile are relevant for my report. “How Private Browsing Works in Chrome” (Desktop), May 26, 2020, *Google*, available at <https://web.archive.org/web/20200526023242/https://support.google.com/chrome/answer/7440301>; “How Private Browsing Works in Chrome” (Mobile), July 6, 2020, *Google*, available at <https://web.archive.org/web/20200706003245/https://support.google.com/chrome/answer/7440301?co=GENIE.Platform%3DiOS&oco=1>. See also, **Appendix I.1**.

⁴² I am informed that the version of the PP as of March 31, 2020 is relevant for my report. “Google Privacy Policy,” March 31, 2020, *Google*, available at <https://policies.google.com/privacy/archive/20200331?hl=en-US>. See also, **Appendices M.1 and M.2**.

⁴³ I am informed that the version of the CPN as of May 20, 2020 is relevant for my report. “Chrome Privacy Notice,” May 20, 2020, *Google*, available at <https://www.google.com/chrome/privacy/archive/20200520/>. See also, **Appendices N.1 and N.2**.

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- e. ***New Account Creation Agreement.*** I understand that, in or around May 2018, Google revised the disclosures on its new account creation screen (the “New Account Creation Agreement”) to state that, “To create a Google Account, you’ll need to agree to the Terms of Service below. In addition, when you create an account, we process your information as described in our Privacy Policy, including these key points [...]”⁴⁴ The New Account Creation Agreement goes on to explain, among other things: “When you search for a restaurant on Google Maps or watch a video on YouTube, for example, we process information about that activity – including information like the video you watched, device IDs, IP addresses, cookie data, and location. We also process the kinds of information described above when you use apps or sites that use Google services like ads, Analytics, and the YouTube video player.”⁴⁵ The New Account Creation Agreement explains that Google uses the data to, among other things, “[d]eliver personalized ads, depending on your account settings, both on Google services and on sites and apps that partner with Google.”⁴⁶
- f. ***Consent Bump Agreement.*** I understand that, in or around June 2016, Google pushed a new consent screen out to existing Google Account holders. I am informed that this screen is referred to as the “Consent Bump Agreement.”⁴⁷ The Consent Bump Agreement describes the types of user-generated data that may be stored in a user’s Account with his or her consent, and contains a MORE OPTIONS button that, when selected, offered the user to learn “More about these features.” Users who chose to learn “More about these features” were taken to a FAQ page that explains “What do we mean by ‘websites and apps that partner with Google?’” The page explains:

Many websites and apps use Google technologies to improve their content and services. For example, a website might use our

⁴⁴ Screenshot of New Account Creation Agreement Desktop, accessed on September 24, 2021. The screenshots of the New Account Creation Agreement I use in my report were taken on September 24, 2021 for desktop and September 30, 2021 for mobile. *See also*, **Appendix O**.

⁴⁵ Screenshot of New Account Creation Agreement Desktop, accessed on September 24, 2021. *See also*, **Appendix O**.

⁴⁶ Screenshot of New Account Creation Agreement Desktop, accessed on September 24, 2021. *See also*, **Appendix O**.

⁴⁷ I am informed that the version of the Consent Bump Agreement shown in a Google internal presentation dated August 2, 2016 (updated January 19, 2017) is also relevant for my report. GOOG-CABR-04067825-7867. *See also*, **Appendix P**.

advertising services (like AdSense) or analytics tools (like partners who use Google Analytics to improve the ads they show).

As you use these sites, your web browser may send certain information to Google that may include the web address of the page that you're visiting, your IP address, or cookies previously set by the site or Google. In the case of mobile apps, this could also include the name of the app and an identifier that helps us to determine which ads we've served to other apps on your device.

These features described today [*i.e.*, in the Consent Bump Agreement] don't change the types of data collected from these websites and apps – they simply change how that data is stored and used.⁴⁸

V. CONSUMER PREFERENCES FOR BROWSERS AND BROWSER FEATURES VARY, AND CONSUMER PERCEPTIONS AND EXPECTATIONS OF PRIVACY ARE CONTEXT SPECIFIC

A. Consumer Preferences of Browsers and Browser Features Vary

42. Despite offering similar design features, settings, and tools, browsers differentiate themselves with various features that differ relative to other browsers in certain areas. For instance, according to a 2021 article published in PCMag, Chrome was rated better than other browsers on compatibility and speed on Windows operating systems, while Safari tested fastest on the MacOS. Opera is the only browser offering a built-in virtual private network (“VPN”). Edge offers voice-reading of webpages with realistic speech and Firefox incorporates an application called “Pocket,” which allows users to store certain content for easy access.⁴⁹ Most browsers offer a private browsing mode.⁵⁰ As all the major browsers are free to the public, inherent features such as ease of use and speed play a role in consumer choice.⁵¹
43. Consumers’ revealed preference across browsers and certain browser features can be inferred from the market share data. Chrome has the largest market share in the US since

⁴⁸ GOOG-CABR-04067825-7867. *See also*, **Appendix P**.

⁴⁹ Muchmore, Michael, “Chrome, Edge, Firefox, Opera, or Safari: Which Browser is Best?” May 20, 2021, *PCMag*, available at <<https://www.pcmag.com/picks/chrome-edge-firefox-opera-or-safari-which-browser-is-best>>, accessed on March 18, 2022.

⁵⁰ Klein, Matt, “How to Enable Private Browsing on Any Web Browser,” July 5, 2017, *How-To Geek*, available at: <<https://www.howtogeek.com/269265/how-to-enable-private-browsing-on-any-web-browser/#:~:text=To%20open%20a%20new%20InPrivate,return%20to%20regular%20browsing%20mode>>, accessed on April 5, 2022; C., Suresh, “How to Start Secret Mode and Add New Tab in Samsung Internet?,” March 17, 2022, *BrowserHow*, available at: <<https://browserhow.com/how-to-start-secret-mode-and-add-new-tab-in-samsung-internet/>>, accessed on April 5, 2022.

⁵¹ Over half of respondents in a 2012 survey said ease of use and speed were important features, while only 13 percent didn't care about any particular feature and use the browser installed on their computer. *See* Pilon, Anne, “Web Browser Survey: Firefox Still Ahead of Chrome,” January 6, 2012, *AYTM*, available at <<https://aytm.com/blog/web-browser-survey/>>, accessed on March 18, 2022.

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2014 and globally since 2013.⁵² Market share data also shows that consumer preferences differ by device. As of 2022, the top browsers in US desktop market are Chrome (60%), Safari (18%), Edge (12%), and Firefox (6%).⁵³ During the same time, the top browsers in US mobile market are Safari (54%), Chrome (40%), and Samsung Internet (4%).⁵⁴ Although pre-installed browsers may have a unique advantage, they are not guaranteed market share. For example, Safari comes pre-installed as the default browser on Apple products, and Edge (and before that, Internet Explorer) comes pre-installed as the default browser on desktops with Windows operating systems. Safari benefits from the widespread use of the iPhone leading to its dominance on mobile devices. However, Microsoft's pre-installed browser is no longer the most used browser, despite Windows consistently dominating the desktop market for over a decade.⁵⁵ This illustrates that consumers' preferences of browser features (aside from what comes "pre-installed") play a role in their browser choice.

44. Additionally, it is common that consumers use multiple browsers. Indeed, as evidenced in the surveys I conducted for this case, more than half of respondents said that they used more than one browser.⁵⁶ Further, my survey data shows that mobile users indicated using Safari more than desktop users, which is consistent with trends observed in the public data.⁵⁷

⁵² Chrome has gained market share in the US every year since 2009 except for 2019 and 2020. Chrome's 2022 market has the highest current US market share with approximately 49 percent, exceeding the next closest competitor in Safari by over 12 percent. Chrome's global market share is even higher with approximately 63 percent in 2022. *See* "Browser Market Share United States of America, 2009-2022," *StatCounter*, available at <<https://gs.statcounter.com/browser-market-share/all/united-states-of-america/#yearly-2009-2022>>, accessed on March 18, 2022; *See also*, "Browser Market Share Worldwide," *StatCounter*, available at <<https://gs.statcounter.com/browser-market-share/#yearly-2009-2022>>, accessed on March 18, 2022.

⁵³ "Desktop Browser Market Share United States of America, 2016-2022," *StatCounter*, available at <<https://gs.statcounter.com/browser-market-share/desktop/united-states-of-america/#yearly-2016-2022>>, accessed on March 18, 2022.

⁵⁴ "Mobile Browser Market Share United States of America, 2016-2022," *StatCounter*, available at <<https://gs.statcounter.com/browser-market-share/mobile/united-states-of-america/#yearly-2016-2022>>, accessed on March 18, 2022.

⁵⁵ "Desktop Operating System Market Share Worldwide, 2009-2022," *StatCounter*, available at <<https://gs.statcounter.com/os-market-share/desktop/worldwide/#yearly-2009-2022>>, accessed on March 18, 2022; *See also*, "Desktop Browser Market Share Worldwide, 2009-2022," *StatCounter*, available at <<https://gs.statcounter.com/browser-market-share/desktop/worldwide/#yearly-2009-2022>>, accessed on March 18, 2022.

⁵⁶ Statistics are calculated using anyone that answered the question across all surveys.

⁵⁷ Statistics are calculated using anyone that answered the question across all surveys.

B. Consumers' Concerns About Privacy Depend on The Context

45. Consumers' concerns about privacy depend on the context and scenario, such as *which* people or entities have access to consumer information, *what* types of consumer information people or entities have access to, and *how* people or entities use this consumer information.⁵⁸ By giving up some level of privacy, consumers may receive benefits such as convenience and better access to services offered by websites.⁵⁹ For example, consumers may want to receive better, contextually relevant suggestions, so they willingly log-in to their Google Accounts and turn on their Web & App Activity, which results in their searches being stored in their Google Accounts.⁶⁰ Trade-offs and decisions regarding convenience and privacy vary greatly from one consumer to another.⁶¹ As a result of context-specific privacy concerns and varying preferences, consumers' stated preferences do not always line up with their revealed preferences regarding privacy. This inconsistency, commonly referred to in the literature as the "privacy paradox," has been widely studied.⁶²
46. To tailor services and products to meet the needs of consumers, companies traditionally use market segmentation,⁶³ with the ultimate form being direct marketing. As explained in

⁵⁸ For instance, consumers are less concerned about tech companies than hackers accessing one's data, less concerned about zip codes being accessed than health or financial data, and less concerned about the use of their data for the purpose of public safety than if it was used as a result of one's identity being stolen. GOOG-CABR-05156497-6555, at 6508-6510. As another example, in one study, a majority of respondents agreed that it was acceptable for employers to install monitoring cameras after multiple workplace thefts, while in another, a majority of respondents said they would not want a "smart thermostat" that tracked their movements inside their house installed in exchange for energy bill savings. Raine, Lee and Maeve Duggan, "Privacy and Information Sharing," January 14, 2016, *Pew Research Center*, available at <<https://www.pewresearch.org/internet/2016/01/14/privacy-and-information-sharing/>>, accessed on April 5, 2022.

⁵⁹ See Oppmann, Patrick, "In Digital World, We Trade Privacy for Convenience," April 14, 2010, *CNN*, available at <<http://www.cnn.com/2010/TECH/04/14/oppmann.off.the.grid/index.html>>, accessed on March 29, 2022; Raine, Lee and Maeve Duggan, "Privacy and Information Sharing," January 14, 2016, *Pew Research Center*, available at <<https://www.pewresearch.org/internet/2016/01/14/privacy-and-information-sharing/>>, accessed on April 5, 2022.

⁶⁰ See "Find & Control Your Web & App Activity," *Google*, available at <<https://support.google.com/websearch/answer/54068?hl=en&co=GENIE.Platform%3DDesktop>>, accessed on March 29, 2022.

⁶¹ See for example, a study on smart speaker consumers and non-consumers found that for consumers who decided to purchase smart speakers, "the most prevalent motivating factor for purchasing a smart speaker was the convenience offered by smart speakers" while for non-consumers "other factors outweighed potential convenience." Lau, Josephine, et al., "Alexa, Are You Listening? Privacy Perceptions, Concerns and Privacy-seeking Behaviors with Smart Speakers," *Proceedings of the ACM on Human-Computer Interaction*, Vol. 2, Issue CSCW, 2018, pp. 1-31, p. 9.

⁶² See for example, Acquisti, Alessandro and Jens Grossklags, "Privacy and Rationality in Individual Decision Making," *IEEE Security & Privacy*, Vol. 3, No. 1, 2005, pp. 26-33, pp. 27-29; See also, Athey, Susan, et al., "The Digital Privacy Paradox: Small Money, Small Costs, Small Talk," *NBER Working Paper Series*, 2017, pp. 1-26, pp. 2,11-12.

⁶³ For example, as explained in *Principles of Marketing*, "Samsung successfully tailors emails—their design, messages, and offers—to the characteristics and needs of specific customers. Through its huge database, Samsung can send tailored messages to customers who just purchased a Samsung device or to people who are likely to purchase a Samsung device in the near future." This benefits Samsung by helping them build better relationships

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Principles of Marketing, “[b]ecause of the one-to-one nature of direct marketing, companies can [...] learn more about [customers’] needs, and personalize products and services to specific customer tastes.”⁶⁴ For example, retailers may use consumers’ transaction data to target coupons to specific consumers.⁶⁵ By allowing retailers to record their transaction histories, consumers may receive better promotions in exchange.

47. Consumers’ preferences over personalized ads also vary. One study finds that the majority of consumers prefer personalized ads over non-personalized ads due to the reduction of irrelevant ads, discovery of new products, and improved efficiency of searching and shopping.⁶⁶ Plaintiff Brown appears to hold the same preferences.⁶⁷ Another study on consumer interactions with Facebook’s personalized ads and privacy controls found that enhanced privacy controls increased consumer engagement with personalized ads, specifically for ads that used more unique information and for groups that were more likely to use opt-out privacy settings.⁶⁸
48. As discussed in this section, consumer preferences vary when it comes to internet browsers and browser features, and consumers’ concerns about privacy vary depending on context. Therefore, to evaluate consumer understanding, perceptions, and expectations specific to the facts of this matter, and to evaluate whether and to what extent consumers’ understanding, perceptions, and expectations affect their likelihood of using a specific internet browser or browser feature, one needs to perform an empirical analysis using data and context relevant to this matter—in other words, this is what we call an empirical question. The importance of conducting empirical analysis is a topic I discussed

with their customers, and customers who are provided with the information most relevant to them. Kotler, Philip and Gary Armstrong, *Principles of Marketing*, Seventeenth Edition, Pearson, 2018 (“Kotler and Armstrong (2018)”), pp. 74-75, 511-515.

⁶⁴ Kotler and Armstrong (2018), p. 514.

⁶⁵ See Khan, Romana, et al., “Dynamic Customer Management and the Value of One-to-One Marketing,” *Marketing Science*, Vol. 28, No. 6, 2009, pp. 1063-1079, pp. 1064, 1072-1075, and 1077.

⁶⁶ Pauzer, Holly, “71% of Consumers Prefer Personalized Ads,” *Adlucent*, available at <<https://www.adlucent.com/resources/blog/71-of-consumers-prefer-personalized-ads/>>, accessed on April 14, 2022.

⁶⁷ “[I]n general, I think targeted advertising is a good thing.” See Brown Deposition, at 158:8-9. See also, Brown Deposition, at 82:7-8.

⁶⁸ Tucker, Catherine E., “Social Networks, Personalized Advertising, and Privacy Controls,” *Journal of Marketing Research*, Vol. LI, 2014, pp. 546-562.

extensively in a paper that I co-authored.⁶⁹ I designed and conducted my Consumer Perceptions and Expectations Study, Interpretation Study, and Likelihood of Use Study while considering the facts and allegations relevant to my assignment. I discuss these studies below in **Section VI** through **Section VIII**.

VI. CONSUMER PERCEPTIONS AND EXPECTATIONS STUDY

49. Plaintiffs state that “[i]t is common knowledge that Google collects information about the web-browsing activity of users who are not in ‘private browsing mode’” and that “[i]t is also common knowledge that Google causes targeted advertisements to be sent based on that information.”⁷⁰ Plaintiffs affirmed this belief at their depositions.⁷¹
50. Nevertheless, Plaintiffs allege that “[b]ased on Google’s representations, Plaintiffs and Class members reasonably believed that their data would not be collected by Google and that Google would not intercept their communications when they were in ‘private browsing mode.’”⁷² Specifically, Plaintiffs allege that “throughout the Class Period, Plaintiffs and Class members reasonably expected that Google would not collect their data while in Incognito mode.”⁷³
51. In accordance with my assignment, I designed a Consumer Perceptions and Expectations Survey to assess users’ perceptions and expectations of the different types of entities that receive or not receive the At-Issue Data (such as IP address, URLs of the sites users visit, and cookies) when they visit websites while in private browsing mode. Users’ perceptions and expectations were assessed after viewing the private browsing splash screens for Chrome, Safari, or Firefox, as well as the “Learn More” pages that are linked to the Chrome and Firefox private browsing splash screens.

⁶⁹ Morales, Andrea C., et al., “Keeping it Real in Experimental Research —Understanding When, Where, and How to Enhance Realism and Measure Consumer Behavior,” *Journal of Consumer Research*, Vol. 44, No. 2, 2017, pp. 465-476, pp. 473-474.

⁷⁰ TAC, ¶ 163.

⁷¹ See **Section IV.A** and footnote 16.

⁷² TAC, ¶ 3.

⁷³ TAC, ¶ 53.

A. Study Design

52. Respondents were assigned to the Chrome group, Safari group, or Firefox group based on which internet browser(s) they stated that they currently used in response to one of the screening questions.⁷⁴ Respondents were presented with the private browsing splash screens for Chrome, Safari, or Firefox, as well as the “Learn More” pages that are linked to the Chrome (for those in the Chrome group) and Firefox private browsing splash screens (for those in the Firefox group), which contain additional information about private browsing.⁷⁵ (See **Table 1**.)

Table 1. Consumer Perceptions and Expectations Survey Groups

Chrome	Safari	Firefox
<ul style="list-style-type: none">• Chrome Incognito Splash Screen• “Learn More” page	<ul style="list-style-type: none">• Safari Private Browsing Splash Screen	<ul style="list-style-type: none">• Firefox Private Browsing Splash Screen• “Learn More” page

53. After being presented with the private browsing splash screen (and “Learn More” page for Chrome and for Firefox), respondents were asked to express their understanding of whether and to what extent the three enumerated entities receive or do not receive data (such as IP address, URLs of the sites visited, and cookies) when they visit websites while in private browsing mode. The types of entities were companies that provide analytics and advertising services to websites visited, internet service providers, or companies that own the websites visited. Respondents chose from a scale of 1 = the type of entity does not receive the data from their private browsing session, 2 = the type of entity probably does not receive the data from their private browsing session, 3 = it is uncertain whether the type of entity receives the data from their private browsing session or not, 4 = the type of entity probably receives the data from their private browsing session, 5 = the type of entity does receive the data from their private browsing session. To avoid order effects, I randomized the order of the scale items to be either 1-2-3-4-5 or 5-4-3-2-1.⁷⁶ The respondent was

⁷⁴ QS7, “Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use? (*Select all that apply*).” **Appendix F.1**.

⁷⁵ There is no hyperlink on the Safari Private Browsing Splash Screen. Therefore, respondents who were presented with the Safari Private Browsing Splash Screen were not presented with the “Learn More” page.

To simulate an organic browsing experience, the Chrome Incognito Splash Screen and the Firefox Private Browsing Splash Screen contained an active hyperlink that could be clicked to open the “Learn More” page. If respondents did not click on the hyperlink, they were still presented with the “Learn More” page after they were presented with the splash screen.

⁷⁶ Diamond (2011), pp. 395-396.

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presented with the same order of scale items across scale questions. Additionally, I randomized the order of the key questions to further mitigate order effects. For example, one respondent might have seen the question on companies that provide analytics and advertising to websites visited first, while another respondent might have seen the question on internet service providers first.⁷⁷

54. If a large proportion of respondents chooses a value of 5, it would mean that, overall, respondents expect that the type of entity *does* receive the data from their private browsing session. If a large proportion of respondents chooses a value of 1, it would mean that, overall, respondents expect that the type of entity *does not* receive the data from their private browsing session.
55. The target population consists of adults residing in the US who use a private browsing mode. The number of targeted respondents is 500, with a minimum requirement of 200 respondents who were presented with the Chrome Incognito Splash Screen, a minimum requirement of 50 respondents who were presented with the Safari Private Browsing Splash Screen, and a minimum requirement of 50 respondents who were presented with the Firefox Private Browsing Splash Screen.

B. Analysis and Results

56. **Tables 2 and 3** present results from the Consumer Perceptions and Expectations Survey. Results show that, overall, respondents expect that companies that provide analytics and advertising services to websites visited, internet service providers, and companies that own the websites visited *receive* data from their private browsing session (such as IP address, URLs of the sites visited, and cookies).⁷⁸ [REDACTED] of the respondents in the Chrome group ([REDACTED]) expect that companies that provide analytics and advertising services to websites visited, internet service providers, and companies that own the websites visited *probably* or *do* receive (4 or 5 on the scale) the data from their private browsing session.
57. Only [REDACTED] of respondents in the Chrome group expect that companies that provide analytics and advertising services to websites visited, internet service providers, and companies that own the websites visited *do not* receive (1 on the scale) the data from their

⁷⁷ My survey instrument is available in **Appendix F.1**.

⁷⁸ My results are robust to different sensitivity analyses. For example, I cut the sample by age group, gender, and region and the findings from my results still hold.

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private browsing session. Even including respondents who answered *probably do not* receive, [REDACTED] of respondents in the Chrome group expect that entities *do not* or *probably do not* receive (1 or 2 on the scale) the data from their private browsing session. Results are similar when analyzing responses from respondents across all three internet browsers.

58. These findings are not consistent with Plaintiffs’ claim that “Class members reasonably believed that their data would not be collected by Google and that Google would not intercept their communications when they were in ‘private browsing mode.’”⁷⁹

**Table 2. User Expectations of Certain Types of Entities
Receiving Data from Their Private Browsing Session
Distribution by Browser Presented**

“While in [MODE NAME] mode, does [TYPE OF ENTITY] receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?”

(1 = “[TYPE OF ENTITY] does not receive the data from my [MODE NAME] session,”
2 = “[TYPE OF ENTITY] probably does not receive the data from my [MODE NAME] session,”
3 = “It is uncertain whether [TYPE OF ENTITY] receives the data from my [MODE NAME] session or not,”
4 = “[TYPE OF ENTITY] probably receives the data from my [MODE NAME] session,”
5 = “[TYPE OF ENTITY] does receive the data from my [MODE NAME] session”)

	Chrome n=270		Safari n=135		Firefox n=126		All Respondents n=531	
	#	%	#	%	#	%	#	%
Companies that provide analytics and advertising services to websites you visited	<div></div>							
Do not (1)								
Probably do not (2)								
Uncertain (3)								
Probably (4)								
Do (5)								
I don’t feel I have enough information to answer this question								
Internet service provider								
Does not (1)								
Probably does not (2)								
Uncertain (3)								
Probably (4)								
Does (5)								
I don’t feel I have enough information to answer this question								
Companies that own the websites you visited								
Do not (1)								
Probably do not (2)								
Uncertain (3)								
Probably (4)								
Do (5)								
I don’t feel I have enough information to answer this question								

Source: Exhibits 3.1, 3.2, and 3.3.

⁷⁹ TAC, ¶ 3.

**Table 3. User Expectations of Certain Types of Entities
Receiving Data from Their Private Browsing Session
Proportions of “Low” Responses vs. Proportions of “High” Responses**

“While in [MODE NAME] mode, does [TYPE OF ENTITY] receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?”

(1 = “[TYPE OF ENTITY] does not receive the data from my [MODE NAME] session,”
2 = “[TYPE OF ENTITY] probably does not receive the data from my [MODE NAME] session,”
3 = “It is uncertain whether [TYPE OF ENTITY] receives the data from my [MODE NAME] session or not,”
4 = “[TYPE OF ENTITY] probably receives the data from my [MODE NAME] session,”
5 = “[TYPE OF ENTITY] does receive the data from my [MODE NAME] session”)

	Chrome n=270 %	All Respondents n=531 %
Companies that provide analytics and advertising services to websites you visited		
Do not (1) or Probably do not (2)		
Probably (4) or Do (5)		
Internet service provider		
Do not (1) or Probably do not (2)		
Probably (4) or Do (5)		
Companies that own the websites you visited		
Do not (1) or Probably do not (2)		
Probably (4) or Do (5)		

Source: Exhibits 4.1 and 4.2.

59. Overall, respondents in the Chrome group (*i.e.*, those who were presented with the Chrome Incognito Splash Screen and “Learn More” page) expect that companies that provide analytics and advertising services to websites visited, internet service providers, and companies that own the websites visited receive the data from their private browsing session.⁸⁰

- a. [REDACTED] of respondents in the Chrome group expect that companies that provide analytics and advertising services to websites visited *do* receive (5 on the scale) the data from their private browsing session, and including those who answered *probably* receive (4 or 5 on the scale), the proportion of respondents is close to [REDACTED]. [REDACTED] of respondents in the Chrome group expect that companies that provide analytics and advertising services to websites visited *do not* receive (1 on the scale) the data from their private browsing session. Even including those who answered *probably do not* receive (1 or 2 on the scale), the proportion of respondents is [REDACTED].

⁸⁰ For each type of entity, the proportion of respondents who answered *do not* receive (1 on the scale) is statistically significantly less than [REDACTED] (p<0.05 using the one-tailed, one sample equality test of proportions).
For each type of entity, the proportion of respondents who answered *do not* or *probably do not* receive (1 or 2 on the scale) is statistically significantly less than [REDACTED] (p<0.05 using the one-tailed, one sample equality test of proportions).
For each type of entity, the proportion of respondents who answered *do not* or *probably do not* receive (1 or 2 on the scale) is statistically significantly less than the proportion of respondents who answered *probably* or *do* receive (4 or 5 on the scale) (p<0.05 using the one-tailed, two sample equality test of proportions). **Tables 2 and 3 and Exhibits 3.1, 3.2, 3.3, 4.1, and 4.2.**

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- b. [REDACTED] of respondents in the Chrome group expect that internet service providers *do* receive (5 on the scale) the data from their private browsing session, and including those who answered *probably* receive (4 or 5 on the scale), the proportion of respondents is [REDACTED]. Only [REDACTED] of respondents in the Chrome group expect that internet service providers *do not* receive (1 on the scale) the data from their private browsing session. Even including those who answered *probably do not* receive (1 or 2 on the scale), the proportion of respondents is [REDACTED].
- c. [REDACTED] of respondents in the Chrome group expect that companies that own the websites visited *do* receive (5 on the scale) the data from their private browsing session, and including those who answered *probably* receive (4 or 5 on the scale), the proportion of respondents is [REDACTED]. Only [REDACTED] of respondents in the Chrome group expect that companies that own the websites visited *do not* receive (1 on the scale) the data from their private browsing session. Even including those who answered *probably do not* receive (1 or 2 on the scale), the proportion of respondents is [REDACTED].
60. Results are consistent when analyzed across respondents in all three groups (*i.e.*, respondents who were presented with the Chrome Incognito Splash Screen and “Learn More” page, the Safari Private Browsing Splash Screen, or the Firefox Private Browsing Splash Screen and “Learn More” page).⁸¹ [REDACTED] of all respondents expect that companies that provide analytics and advertising services to websites visited *do* receive (5 on the scale) the data from their private browsing session, and including those who answered *probably* receive (4 or 5 on the scale), the proportion of respondents is [REDACTED]. [REDACTED] of all respondents expect that companies that provide analytics and advertising services to websites visited *do not* receive (1 on the scale) the data from their private browsing session.

⁸¹ For each type of entity, the proportion of respondents who answered *do not* receive (1 on the scale) is statistically significantly less than [REDACTED] ($p < 0.05$ using the one-tailed, one sample equality test of proportions).

For each type of entity, the proportion of respondents who answered *do not* or *probably do not* receive (1 or 2 on the scale) is statistically significantly less than [REDACTED] ($p < 0.05$ using the one-tailed, one sample equality test of proportions).

For each type of entity, the proportion of respondents who answered *do not* or *probably do not* receive (1 or 2 on the scale) is statistically significantly less than the proportion of respondents who answered *probably* or *do* receive (4 or 5 on the scale) ($p < 0.05$ using the one-tailed, two sample equality test of proportions). **Tables 2 and 3 and Exhibits 3.1, 3.2, 3.3, 4.1, and 4.2.**

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Even including those who answered *probably do not* receive (1 or 2 on the scale), the proportion of respondents is [REDACTED].

VII. INTERPRETATION STUDY

61. Plaintiffs all testified that they read Google’s Privacy Policy.⁸² They further state that “[i]t is common knowledge that Google collects information about the web-browsing activity of users who are not in ‘private browsing mode’” and that “[i]t is also common knowledge that Google causes targeted advertisements to be sent based on that information.”⁸³ Plaintiffs affirmed at their depositions that they understood Google collects the At-Issue Data when they are in a browsing mode other than private browsing mode.⁸⁴
62. Plaintiffs also claim that “[n]othing in Google’s Privacy Policy or Incognito Screen leads users to believe that during private browsing Google continues to persistently monitor them [...] In fact, when the Privacy Policy and Incognito Screen are read together, the user necessarily reaches the opposite conclusion.”⁸⁵
63. In accordance with my assignment, I designed an Interpretation Survey to determine whether and to what extent users expect Google to receive or to not receive URLs of the sites users visit, IP addresses, and cookies placed on users’ browsers during their private browsing session after reviewing the Incognito Splash Screen and “Learn More” page, as well as the PP and CPN,⁸⁶ the New Account Creation Agreement, or the Consent Bump Agreement for some respondents.

A. Study Design

64. Respondents were randomly assigned to one of four groups with different sets of screens and policies presented: “Splash Screen Only,” “Splash Screen with Policies (Highlighted),” “Splash Screen with New Account Creation Agreement,” and “Splash Screen with Consent Bump Agreement and FAQ Page.” (See **Table 4.**)

⁸² See Byatt Deposition, at 23:2-18, 29:5-20; Davis Deposition, at 48:19-49:6, 51:11-18, 93:13-21; Trujillo Deposition, at 36:2-12; Brown Deposition, at 30:19-31:1, 33:2-4; Castillo Deposition, at 24:18-25:20.

⁸³ TAC, ¶ 163.

⁸⁴ See **Section IV.A** and footnote 16.

⁸⁵ TAC, ¶ 57.

⁸⁶ The Complaint alleges that the CPN, the PP, and the Incognito Splash Screen are part of the contract between Google and Class members. TAC, ¶ 268.

65. All respondents were presented with the Chrome Incognito Splash Screen as well as the “Learn More” page that is linked to the Incognito Splash Screen, which contains additional information about private browsing.⁸⁷ Based on which group they were assigned to, respondents were also shown either no additional documents (Splash Screen Only group), the PP and CPN (with and without highlights drawing attention to language relevant to Plaintiffs’ allegations) (Splash Screen with Policies (Highlighted) group),⁸⁸ the New Account Creation Agreement (Splash Screen with New Account Creation Agreement group), or the Consent Bump Agreement and FAQ Page (Splash Screen with Consent Bump Agreement and FAQ Page).

Table 4. Interpretation Survey Groups

Splash Screen Only	<ul style="list-style-type: none">• Incognito Splash Screen• “Learn More” page
Splash Screen with Policies (Highlighted)	<ul style="list-style-type: none">• Google Privacy Policy, March 31, 2020 (with and without highlights)• Chrome Privacy Notice, May 20, 2020 (with and without highlights)• Incognito Splash Screen• “Learn More” page
Splash Screen with New Account Creation Agreement	<ul style="list-style-type: none">• New Account Creation Agreement• Incognito Splash Screen• “Learn More” page
Splash Screen with Consent Bump Agreement and FAQ Page	<ul style="list-style-type: none">• Consent Bump Agreement and FAQ page• Incognito Splash Screen• “Learn More” page

66. After reviewing the Incognito Splash Screen, “Learn More” screen, and any assigned policies, each respondent was asked a series of three scale questions. These questions required respondents to express their understanding of whether Google receives or does not receive three types of data while in Incognito mode: URLs of the sites visited, IP addresses, and cookies placed on the browser. Respondents chose from a scale of 1 = Google does not receive this information, 2 = Google probably does not receive this

⁸⁷ In the same manner as in the Consumer Perceptions and Expectations Study, to simulate an organic browsing experience, the Incognito Splash Screen contained an active hyperlink that could be clicked to open the “Learn More” page. If respondents did not click on the hyperlink, they were still presented with the “Learn More” page after they were presented with the Incognito Splash Screen.

⁸⁸ In order to draw attention to the language relevant to Plaintiffs’ allegations, “respondents could be shown only the disputed text; or, as the realists advocate, they could be exposed to additional facts surrounding the case.” Since the survey method “rel[ies] on respondents with limited attention and sophistication” it should “restrict[] the quantum of such background facts.” Ben-Shahar and Strahilevitz (2017), p. 1778.

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information, 3 = It is uncertain whether Google receives this information or not, 4 = Google probably receives this information, 5 = Google does receive this information.^{89, 90}

67. If a large proportion of respondents chooses a value of 5, it would mean that, overall, respondents expect that Google *does* receive the specific types of data while in Incognito mode. If a large proportion of respondents chooses a value of 1, it would mean that, overall, respondents expect that Google *does not* receive the specific types of data while in Incognito mode.
68. The target population consisted of adults residing in the US who use private browsing mode. The number of targeted respondents is 1,000, with a target of 250 respondents in each group.

B. Analysis and Results

69. **Tables 5 and 6** present results from the Interpretation Survey. Results show that, overall, respondents expect that Google receives URLs of the sites visited, IP addresses, and cookies placed on the browser while in Incognito mode.^{91,92} [REDACTED] of the respondents in each group ([REDACTED]) expect that Google *probably* receives or *does* receive (4 or 5 on the scale) URLs of the sites visited while in Incognito mode, [REDACTED] of respondents in each group ([REDACTED]) expect that Google *probably* receives or *does* receive (4 or 5 on the scale) IP addresses while in Incognito mode, and [REDACTED] of respondents in each group ([REDACTED]) expect that Google *probably* receives or *does* receive (4 or 5 on the scale) cookies placed on the browser while in Incognito mode.
70. In each group, [REDACTED] of respondents expect that Google *does not* receive (1 on the scale) URLs of the sites visited while in Incognito mode, [REDACTED] of respondents expect that Google *does not* receive (1 on the scale) IP addresses while in Incognito mode, and [REDACTED] of respondents expect that Google *does not* receive (1 on the scale) cookies

⁸⁹ Like in my other surveys, to avoid order effects, I randomized the order of the scale items to be either 1-2-3-4-5 or 5-4-3-2-1. The respondent was presented with the same order of scale items across scale questions. Additionally, I randomized the order of the key questions to further mitigate order effects. Diamond (2011), pp. 395-396.

⁹⁰ My survey instrument is available in **Appendix F.2**.

⁹¹ Note that the survey responses indicates that users anticipate that Google receives information in private browsing mode generally, even though, in reality, they would only receive this information if the website uses Google's services.

⁹² My results are robust to different sensitivity analyses. For example, I cut the sample by age group, gender, and region and the findings from my results still hold.

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placed on the browser while in Incognito mode. Even including respondents who answered *probably does not* receive, [REDACTED] respondents expect that Google *does not* or *probably does not* receive (1 or 2 on the scale) URLs of the sites visited while in Incognito mode. The percentage of respondents that expect that Google *does not* or *probably does not* receive (1 or 2 on the scale) IP addresses is [REDACTED] and for cookies placed on the browser is [REDACTED].

71. These findings are not consistent with Plaintiffs' claim that "[n]othing in Google's Privacy Policy or Incognito Screen leads users to believe that during private browsing Google continues to persistently monitor them [...] In fact, when the Privacy Policy and Incognito Screen are read together, the user necessarily reaches the opposite conclusion."⁹³

⁹³ TAC, ¶ 57.

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Table 5. User Interpretation of Google Receiving Certain Types of Data from Their Incognito Session
Distribution by Group

“Based on the screens that you reviewed, please select one of the following regarding [DATA TYPE] during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product): ”

- (1 = “Google does not receive this information”
2 = “Google probably does not receive this information,”
3 = “It is uncertain whether Google receives this information or not,”
4 = “Google probably receives this information”
5 = “Google does receive this information”)

	Splash Screen Only	Splash Screen with Policies (Highlighted)	Splash Screen with New Account Creation Agreement	Splash Screen with Consent Bump Agreement and FAQ Page
	n=254	n=254	n=252	n=253
	# %	# %	# %	# %
URLs of the sites you visit	<div></div>			
Does not (1)				
Probably does not (2)				
Uncertain (3)				
Probably (4)				
Does (5)				
I don’t feel I have enough information to answer this question				
IP address				
Does not (1)				
Probably does not (2)				
Uncertain (3)				
Probably (4)				
Does (5)				
I don’t feel I have enough information to answer this question				
Cookies placed on your browser				
Does not (1)				
Probably does not (2)				
Uncertain (3)				
Probably (4)				
Does (5)				
I don’t feel I have enough information to answer this question				

Source: Exhibits 7.1, 7.2, and 7.3.

Table 6. User Interpretation of Google Receiving Certain Types of Data from Their Incognito Session
Proportions of “Low” Responses vs. Proportions of “High” Responses

“Based on the screens that you reviewed, please select one of the following regarding [DATA TYPE] during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product): ”

(1 = “Google does not receive this information”
2 = “Google probably does not receive this information,”
3 = “It is uncertain whether Google receives this information or not,”
4 = “Google probably receives this information”
5 = “Google does receive this information”)

	Splash Screen Only	Splash Screen with Policies (Highlighted)	Splash Screen with New Account Creation Agreement	Splash Screen with Consent Bump Agreement and FAQ Page
	n=254	n=254	n=252	n=253
	%	%	%	%
URLs of the sites you visit	<div></div>			
Does not (1) or Probably does not (2)				
Probably (4) or Does (5)				
IP address				
Does not (1) or Probably does not (2)				
Probably (4) or Does (5)				
Cookies placed on your browser				
Does not (1) or Probably does not (2)				
Probably (4) or Does (5)				

Source: Exhibits 8.1 and 8.2.

72. Overall, respondents in the Splash Screen Only group expect that Google receives URLs of the sites visited, IP addresses, and cookies placed on the browser while in Incognito mode.⁹⁴

- a. [REDACTED] of respondents in the Splash Screen Only group expect that Google *does* receive (5 on the scale) URLs of the sites visited while in Incognito mode, and including those who answered *probably* receives (4 or 5 on the scale), the proportion of respondents is [REDACTED]. Only [REDACTED] of respondents in the Splash Screen Only group expect that Google *does not* receive (1 on the scale) URLs of the sites visited while in Incognito mode. Even including those who answered *probably does not* receive (1 or 2 on the scale), the proportion of respondents is [REDACTED].

⁹⁴ For each type of data, the proportion of respondents who answered *does not* receive (1 on the scale) is statistically significantly less than [REDACTED] (p<0.05 using the one-tailed, one sample equality test of proportions). For each type of data, the proportion of respondents who answered *does not* or *probably does not* receive (1 or 2 on the scale) is statistically significantly less than [REDACTED] (p<0.05 using the one-tailed, one sample equality test of proportions). For each type of data, the proportion of respondents who answered *does not* or *probably does not* receive (1 or 2 on the scale) is statistically significantly less than the proportion of respondents who answered *probably* receives or *does* receive (4 or 5 on the scale) (p<0.05 using the one-tailed, two sample equality test of proportions). **Tables 5 and 6 and Exhibits 7.1, 7.2, 7.3, 8.1, and 8.2.**

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- b. [REDACTED] of respondents in the Splash Screen Only group expect that Google *does* receive (5 on the scale) IP addresses while in Incognito mode, and including those who answered *probably* receives (4 or 5 on the scale), the proportion of respondents is [REDACTED]. Only [REDACTED] of respondents in the Splash Screen Only group expect that Google *does not* receive (1 on the scale) IP addresses while in Incognito mode. Even including those who answered *probably does not* receive (1 or 2 on the scale), the proportion of respondents is [REDACTED].
- c. [REDACTED] of respondents in the Splash Screen Only group expect that Google *does* receive (5 on the scale) cookies placed on the browser while in Incognito mode, and including those who answered *probably* receives (4 or 5 on the scale), the proportion of respondents is [REDACTED]. [REDACTED] of respondents in the Splash Screen Only group expect that Google *does not* receive (1 on the scale) cookies placed on the browser while in Incognito mode. Even including those who answered *probably does not* receive (1 or 2 on the scale), the proportion of respondents is [REDACTED].
73. Results are consistent among respondents in the Splash Screen with Policies (Highlighted) group, Splash Screen with New Account Creation Agreement group, and Splash Screen with Consent Bump Agreement and FAQ Page group.⁹⁵
- a. Overall, respondents in these three groups expect that Google receives URLs of the sites visited while in Incognito mode. [REDACTED] of respondents in each of these three groups expect that Google *does* receive (5 on the scale) URLs of the sites visited while in Incognito mode, and including those who answered *probably* receives (4 or 5 on the scale), the proportions of respondents in each of these three groups are [REDACTED]. Only [REDACTED] of

⁹⁵ For each type of data, the proportion of respondents who answered *does not* receive (1 on the scale) is statistically significantly less than [REDACTED] ($p < 0.05$ using the one-tailed, one sample equality test of proportions). The exception is the proportion of respondents who answered *does not* receive (1 on the scale) for cookies placed on the browser in the Splash Screen with Consent Bump Agreement and FAQ Page group, which is marginally significantly less than [REDACTED] ($p < 0.1$).

For each type of data, the proportion of respondents who answered *does not* or *probably does not* receive (1 or 2 on the scale) is statistically significantly less than [REDACTED] ($p < 0.05$ using the one-tailed, one sample equality test of proportions).

For each type of data, the proportion of respondents who answered *does not* or *probably does not* receive (1 or 2 on the scale) is statistically significantly less than the proportion of respondents who answered *probably* receives or *does* receive (4 or 5 on the scale) ($p < 0.05$ using the one-tailed, two sample equality test of proportions). **Tables 5 and 6 and Exhibits 7.1, 7.2, 7.3, 8.1, and 8.2.**

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respondents in each of these three groups expect that Google *does not* receive (1 on the scale) URLs of the sites visited while in Incognito mode. Even including those who answered *probably does not* receive (1 or 2 on the scale), the proportions of respondents in each of these three groups are between [REDACTED].

- b. Overall, respondents in these three groups expect that Google receives IP addresses while in Incognito mode. [REDACTED] of respondents in each of these three groups expect that Google *does* receive (5 on the scale) IP addresses while in Incognito mode, and including those who answered *probably receives* (4 or 5 on the scale), the proportions of respondents in each of these three groups are [REDACTED]. Only [REDACTED] of respondents in each of these three groups expect that Google *does not* receive (1 on the scale) IP addresses while in Incognito mode. Even including those who answered *probably does not* receive (1 or 2 on the scale), the proportions of respondents in each of these three groups are between [REDACTED].
- c. Overall, respondents in these three groups expect that Google receives cookies placed on the browser while in Incognito mode. [REDACTED] of respondents in each of these three groups expect that Google *does* receive (5 on the scale) cookies placed on the browser while in Incognito mode, and including those who answered *probably receives* (4 or 5 on the scale), the proportions of respondents in each of these three groups is [REDACTED]. [REDACTED] of respondents in each of these three groups expect that Google *does not* receive (1 on the scale) cookies placed on the browser while in Incognito mode. Even including those who answered *probably does not* receive (1 or 2 on the scale), the proportions of respondents in each of these three groups are between [REDACTED].

VIII. LIKELIHOOD OF USE STUDY

74. Plaintiffs allege that Chrome users understood the text on Chrome's Incognito Splash Screen "to mean they could browse privately, without Google's continued tracking and

data collection.”⁹⁶ Additionally, Plaintiffs allege that “Google left the misleading impression that users’ data was not being intercepted and collected without their knowledge and omitted to disclose the ways in which Google actually intercepts and uses user data in private browsing sessions.”⁹⁷ Plaintiffs state that “Google could have disclosed on this Incognito Screen that Google would track users and collect their data while they were browsing privately, but Google did not do that.”⁹⁸ At the motion to dismiss stage, the Court noted that “the Incognito Splash Screen omits Google from the list of entities that can view a user’s activity in private browsing mode,” and “a reasonable user could have read the two phrases [(‘Now you can browse privately’ and ‘other people who use this device won’t see your activity’)] as being independent of each other.”⁹⁹

75. In accordance with my assignment, I designed a Likelihood of Use Survey to determine whether and to what extent modification of certain language on the Incognito Splash Screen and the “Learn More” page that address Plaintiffs’ criticisms of those documents—namely, that these documents should have identified Google as an entity that may receive data when an Incognito user visits a website using Google services—impacts users’ likelihood to use Chrome in Incognito mode for private browsing.

A. Study Design

76. For this survey, I used a test/control experimental design. In such a design, respondents in two groups (test and control) are presented with different versions of the stimuli, and they answer the same set of questions. Having a control group can correct for any preexisting beliefs or other influences that would have produced similar response levels in both the test and control groups, therefore eliminating the effects of any background noise on results and isolating the causal effect of the hypothesized causal variable on a respondent’s response.¹⁰⁰ A comparison between the answers provided by respondents in these two groups creates the ability to evaluate the effect of different wording used in the two stimuli

⁹⁶ TAC, ¶ 53.

⁹⁷ TAC, ¶ 151.

⁹⁸ TAC, ¶ 53.

⁹⁹ Order Denying Motion to Dismiss, *Chasom Brown et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, March 12, 2021, pp. 17-18.

¹⁰⁰ Diamond (2011), pp. 398-399.

and “assess[] responses to closed-ended questions.”¹⁰¹ Therefore, “the focus on the response level in a control group design is not on the absolute response level, but on the difference between the response level of the experimental group and that of the control group.”¹⁰²

77. Respondents in this study were randomly assigned to either the Actual Language group or the Alternative Language group. (See **Table 7.**)

Table 7. Likelihood of Use Survey Experimental Groups

Actual Language Group	Alternative Language Group
<ul style="list-style-type: none">Actual Chrome Incognito Splash Screen<i>(If respondent clicked the “Learn more” hyperlink)</i> Actual “Learn More” page	<ul style="list-style-type: none">Alternative Chrome Incognito Splash Screen<i>(If respondent clicked the “Learn more” hyperlink)</i> Alternative “Learn More” page

78. Because this survey is about users’ actual behavior and because context matters, I presented a scenario to simulate the browsing experience. This scenario was the same across all respondents. This scenario asked respondents to imagine that they were researching a sensitive topic online and they decided to browse the web in private browsing mode.

79. Following the presentation of the scenario, respondents that were assigned to the Actual Language group were presented with the actual Incognito Splash Screen. This screen contained an active hyperlink that could be clicked to open the “Learn More” screen. If respondents clicked on the hyperlink, they were also presented with the actual “Learn More” page that contains additional information about Incognito mode.

80. Respondents that were assigned to the Alternative Language group were presented with the same set of stimuli as those in the Actual Language group, except that certain language on the Incognito Splash Screen and on the “Learn More” page was modified. Specifically, in the alternative version of the Incognito Splash Screen, the introductory sentence, “Now you can browse privately, and other people who use this device won’t see your activity” was modified to say, “Now you can browse privately, which means other people who use this device won’t see your activity.” Similarly, under the heading, “Your activity might still be visible to,” I added a bullet that stated: “Companies that provide services to websites you visit (such as Google Analytics, Adobe Analytics, Google Ad Manager, Facebook

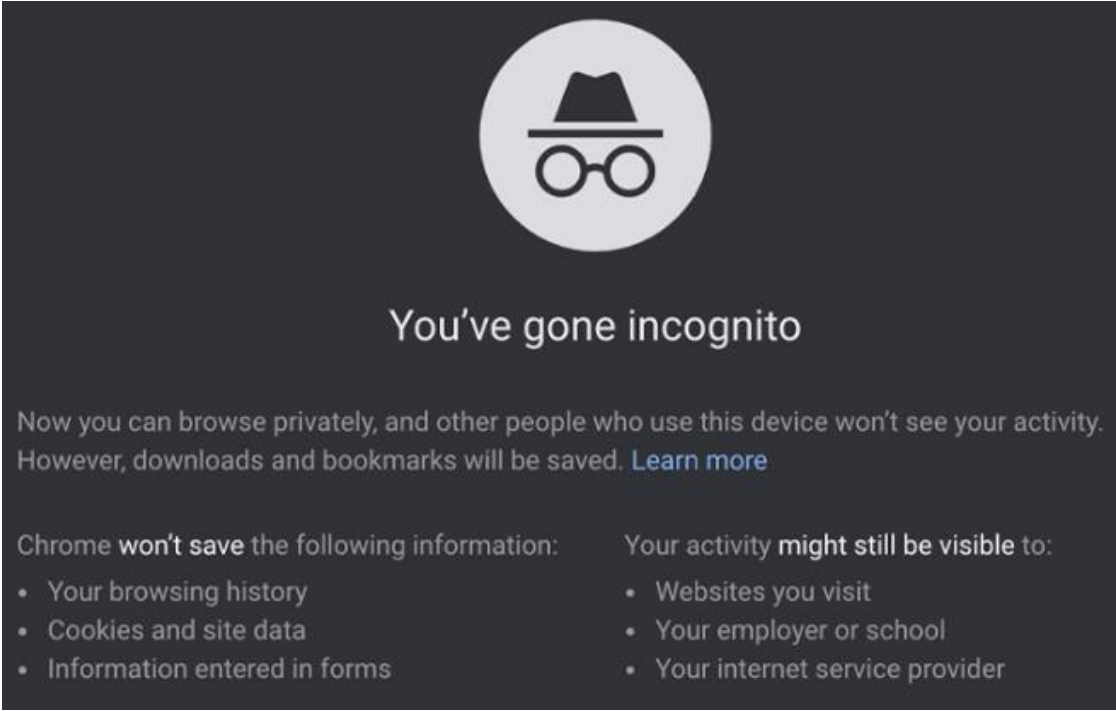
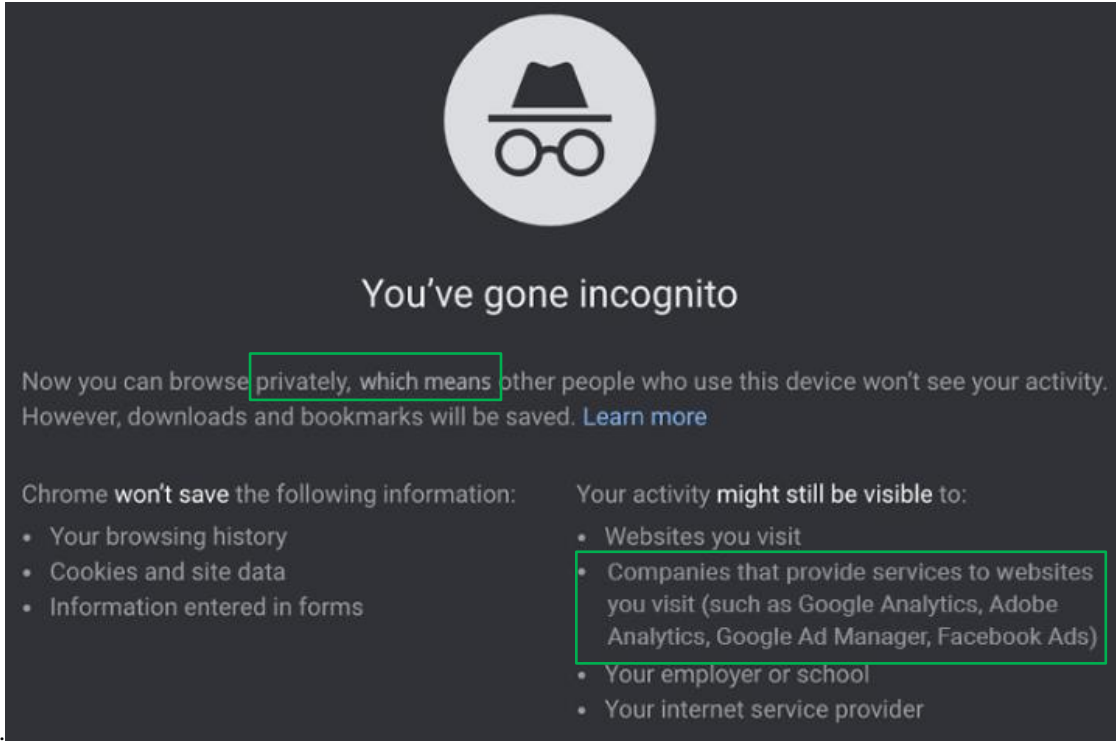
¹⁰¹ Diamond (2011), p. 399.

¹⁰² Diamond (2011), p. 399.

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Ads).” These language modifications address Plaintiffs’ allegations as to how the actual language in the Incognito Splash Screen allegedly is misleading. **Tables 8 and 9** below show the excerpts of the actual and alternative images presented to the respondents. The green textboxes indicate the location and edits made.¹⁰³

Table 8. Excerpts of Actual Language and Alternative Language (Incognito Splash Screen)

Actual Incognito Splash Screen
 The image shows the actual Incognito splash screen. At the top is a circular icon with a hat and glasses. Below it, the text reads "You've gone incognito". A paragraph follows: "Now you can browse privately, and other people who use this device won't see your activity. However, downloads and bookmarks will be saved. Learn more ". Below this, there are two columns of information. The left column is titled "Chrome won't save the following information:" and lists: "Your browsing history", "Cookies and site data", and "Information entered in forms". The right column is titled "Your activity might still be visible to:" and lists: "Websites you visit", "Your employer or school", and "Your internet service provider".
Alternative Incognito Splash Screen
 The image shows the alternative Incognito splash screen. It has the same layout as the actual one, but with modifications highlighted in green boxes. The first modification is in the paragraph: "Now you can browse privately, which means other people who use this device won't see your activity." The second modification is in the right column's list: "Companies that provide services to websites you visit (such as Google Analytics, Adobe Analytics, Google Ad Manager, Facebook Ads)".

¹⁰³ See **Appendices H.1, H.2, I.1, and I.2** for the full images presented to the respondents.

Table 9. Excerpts of Actual Language and Alternative Language (“Learn More” Page)

Actual “Learn More” Page
<p>Your activity might still be visible</p> <p>Incognito mode stops Chrome from saving your browsing activity to your local history. Your activity, like your location, might still be visible to:</p> <ul style="list-style-type: none">• Websites you visit, including the ads and resources used on those sites• Websites you sign in to• Your employer, school, or whoever runs the network you’re using• Your internet service provider• Search engines<ul style="list-style-type: none">• Search engines may show search suggestions based on your location or activity in your current Incognito browsing session. <p>Some of your info might still be visible</p> <p>A web service, website, search engine, or provider may be able to see:</p> <ul style="list-style-type: none">• Your IP address, which can be used to identify your general location• Your activity when you use a web service• Your identity if you sign in to a web service, like Gmail <p>You can still find and use your payment, password and contact info, but you can’t change your saved info in a Chrome Incognito window.</p>
Alternative “Learn More” Page
<p>Your activity might still be visible</p> <p>Incognito mode stops Chrome from saving your browsing activity to your local history. Your activity, like your location, might still be visible to:</p> <div><ul style="list-style-type: none">• Websites you visit, including the ads and resources used on those sites (such as Google Analytics, Adobe Analytics, Google Ad Manager, Facebook Ads)</div> <ul style="list-style-type: none">• Websites you sign in to• Your employer, school, or whoever runs the network you’re using• Your internet service provider• Search engines<ul style="list-style-type: none">• Search engines may show search suggestions based on your location or activity in your current Incognito browsing session. <p>Some of your info might still be visible</p> <div><p>A web service (such as Google Analytics, Adobe Analytics, Google Ad Manager, Facebook Ads), website, search engine, or provider may be able to see:</p><ul style="list-style-type: none">• Your IP address, which can be used to identify your general location• Your activity when you use a web service• Your identity if you sign in to a web service, like Gmail</div> <p>You can still find and use your payment, password and contact info, but you can’t change your saved info in a Chrome Incognito window.</p>

81. After viewing the Incognito Splash Screen and for some respondents, the “Learn More” screen, respondents were asked how likely or unlikely they were to use the Chrome browser in Incognito mode to do online research on a sensitive topic. Respondents were asked to indicate the likelihood that they would use Chrome in Incognito mode to do online research on a sensitive topic on a scale of 1 (Unlikely) to 5 (Likely). Average likelihood of using Chrome in Incognito mode to do online research on a sensitive topic was calculated by

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using the numerical values associated with each response option (1 = Unlikely to use the Chrome browser in Incognito mode, 2 = Somewhat unlikely to use the Chrome browser in Incognito mode, 3 = Neither likely nor unlikely to use the Chrome browser in Incognito mode, 4 = Somewhat likely to use the Chrome browser in Incognito mode, and 5 = Likely to use the Chrome browser in Incognito mode).^{104, 105} If the average value is close to 5, this means the average respondent will likely use Chrome in Incognito mode to do online research on a sensitive topic, whereas if the average value is close to 1, this means the average respondent will unlikely use Chrome in Incognito mode to do online research on a sensitive topic.

82. The target population consists of adults residing in the US who use a private browsing mode. The number of targeted respondents is 1,000, with a target of 500 respondents in each experimental group.

B. Analysis and Results

83. **Figure 4 and Table 10** present my Likelihood of Use Survey results and show respondents' average likelihood of using Chrome for online research on a sensitive topic. Results show that the average respondent would likely use Chrome in Incognito mode to do online research on a sensitive topic after viewing the Incognito Splash Screen and for some respondents, the "Learn More" page. Importantly, modifying certain language on the Incognito Splash Screen and the "Learn More" page (*i.e.*, the second phrase in the introductory sentence and information regarding the list of entities to which users' activity might still be visible) to address Plaintiffs' criticisms regarding what those documents *should* disclose *has no statistically significant impact* on respondents' likelihood of using Chrome in Incognito mode to do online research on a sensitive topic.¹⁰⁶ This finding shows that including language that Plaintiffs claim "Google could have disclosed on [the] Incognito Screen [to describe] that Google would track users and collect their data while

¹⁰⁴ Like in my other surveys, to avoid order effects, I randomized the order of the scale items to be either 1-2-3-4-5 or 5-4-3-2-1. Diamond (2011), pp. 395-396.

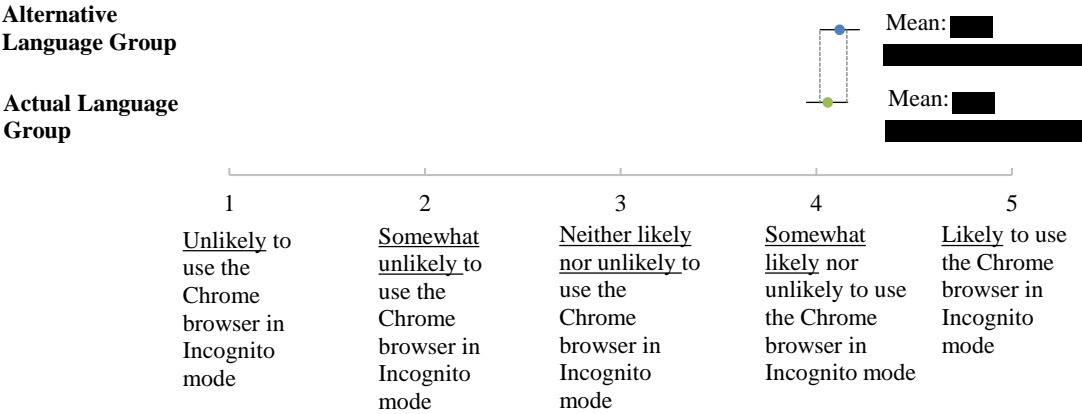
¹⁰⁵ My survey instrument is available in **Appendix F.3**.

¹⁰⁶ My results are robust to different sensitivity analyses. For example, I cut the sample by age group, gender, and region and the findings from my results still hold.

they were browsing privately”¹⁰⁷ does not have an impact on respondents’ likelihood of using Chrome.

Figure 4. User Likelihood to Use Chrome in Incognito Mode
Average Likelihood by Group

“How likely or unlikely are you to use the Chrome browser in Incognito mode for your online research about the sensitive topic mentioned in the previous scenario?”



Notes:
[1] The data points represent the mean values of the Actual Language and Alternative Language group responses to question 5.
[2] Responses of “I don’t feel I have enough information to answer this question” were excluded in the calculation of means.

Source: **Exhibit 11.**

Table 10. User Likelihood to Use Chrome in Incognito Mode
Distribution by Group

“How likely or unlikely are you to use the Chrome browser in Incognito mode for your online research about the sensitive topic mentioned in the previous scenario?”

1 = “Unlikely to use the Chrome browser in Incognito mode,”
2 = “Somewhat unlikely to use the Chrome browser in Incognito mode,”
3 = “Neither likely nor unlikely to use the Chrome browser in Incognito mode,”
4 = “Somewhat likely to use the Chrome browser in Incognito mode,”
5 = “Likely to use the Chrome browser in Incognito mode”)

	Actual Language Group		Alternative Language Group	
	n=503		n=502	
	#	%	#	%
Unlikely (1)	[redacted]			
Somewhat unlikely (2)				
Neither likely nor unlikely (3)				
Somewhat likely (4)				
Likely (5)				
I don’t feel I have enough information to answer this question				

Source: **Exhibit 12.**

84. For respondents in the Actual Language group, the average likelihood of using Chrome in Incognito mode to do online research on a sensitive topic is [redacted].¹⁰⁸ For respondents in the Alternative Language group, the average likelihood

¹⁰⁷ TAC, ¶ 53.

¹⁰⁸ **Figure 4** and **Exhibit 11.**

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- of using Chrome in Incognito mode to do online research on a sensitive topic is [REDACTED].¹⁰⁹ Using the t-test to assess significance, the difference between the means of the two groups is not statistically significant.¹¹⁰
85. Among respondents in the Actual Language group, [REDACTED] are *likely* (5 on the scale) to use Chrome in Incognito mode to do online research on a sensitive topic, and including those who answered *somewhat likely* (4 or 5 on the scale), the proportion of respondents is [REDACTED].¹¹¹ Among respondents in the Alternative Language group, [REDACTED] are *likely* (5 on the scale) to use Chrome in Incognito mode to do online research on a sensitive topic, and including those who answered *somewhat likely* (4 or 5 on the scale), the proportion of respondents is [REDACTED].¹¹² Using the two-tailed, two sample equality test of proportions to assess significance, which compares whether the proportions of two groups are the same, the proportion of respondents who answered *likely* (5 on the scale) in the Actual Language group is not statistically significantly different from the proportion of respondents who answered *likely* (5 on the scale) in the Alternative Language group.”¹¹³ The proportion of respondents who answered *somewhat likely* or *likely* (4 or 5 on the scale) in the Actual Language group is also not statistically significantly different from the proportion of respondents who answered *somewhat likely* or *likely* (4 or 5 on the scale) in the Alternative Language group.”^{114, 115}
86. The difference in likelihood to use Chrome in Incognito mode to do online research on a sensitive topic is not statistically significant between respondents in the Actual Language and Alternative Language groups, meaning the alternative language further clarifying that Incognito mode is designed to provide privacy from “other people who use this device,” and does not prevent web-service entities like Google from receiving their data, has no

¹⁰⁹ Figure 4 and Exhibit 11.

¹¹⁰ Exhibit 11.

¹¹¹ Table 10 and Exhibits 12 and 13.

¹¹² Table 10 and Exhibits 12 and 13.

¹¹³ Exhibit 13.

¹¹⁴ Exhibit 13.

¹¹⁵ The proportion of respondents who answered “I do not feel I have enough information to answer this question” in the Actual Language group is not statistically significantly different from the proportion of respondents who answered “I do not feel I have enough information to answer this question” in the Alternative Language group.

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impact on respondents' overall willingness to use Chrome in Incognito mode to do online research on a sensitive topic.

A handwritten signature in blue ink, consisting of a stylized 'A' followed by a long, sweeping horizontal line that extends to the right.

On Amir

Exhibit 1**Consumer Perceptions and Expectations Survey Respondent Demographics**

Demographic	Starts^[1]		At QS8^[2]		Completes^[3]	
	N	%	N	%	N	%
<i>Age</i>						
18-29						
30-39						
40-49						
50-59						
60+						
Total						
<i>Gender</i>						
Female						
Male						
Other						
Total						
<i>U.S. Region</i>						
Midwest						
Northeast						
South						
Total						

Notes:

[1] Age, gender, and U.S. region distributions are calculated using the “NexusAge,” “NexusGender,” and “NexusRegion” variables, respectively. Responses with a missing value for any of the “NexusAge,” “NexusGender,” and “NexusRegion” variables are excluded.

[2] Age, gender, and U.S. region distributions are calculated using the “QS2,” “QS3,” and “Region_US” variables, respectively, for all respondents who provided a response to “QS8. In the past six months, which of the following features, if any, have you used on your internet browser(s)?”

[3] Age, gender, and U.S. region distributions are calculated using the “QS2,” “QS3,” and “Region_US” variables, respectively, for all respondents who completed the survey and are in the final analytical sample.

[4] All response options that do not result in termination from the survey are shown.

Source:

2203704.xlsx

Exhibit 2

Consumer Perceptions and Expectations Survey Response Statistics

Status	N	%
<i>Total Clicks</i> ^[1]		
<i>Completed Survey</i>		
Excluded by Survey Vendor ^[2]		
Final Analytical Sample		
<i>Screened Out of Survey</i>		
Overquota ^[3]		
RVID Dupes ^[4]		
At QS0 (Captcha)		
At QS2 (Age) / QS3 (Gender) ^[5]		
At QS4 (State) ^[6]		
At QS5 (Employment) ^[7]		
At QS6 (Attention) ^[8]		
At QS7 (Browser) ^[9]		
At QS8 (Browser Features) ^[10]		
<i>Dropped Out of Survey</i>		
During Screener		
After Screener		

Notes:

[1] The total number of people who clicked on the survey link is the sum of “Completed Survey,” “Screened Out of Survey,” and “Dropped Out of Survey.”

[2] Respondents were excluded from the final analytical sample by the survey vendor if they failed standard quality checks conducted by the survey vendor.

[3] Respondents were screened out of the survey if they exceeded the survey quotas.

[4] Duplicate responses were removed.

[5] Respondents were screened out at QS2 if they were under 18 years old, preferred not to answer, or if the age they indicated did not match the age on file with the survey vendor. Respondents were screened out at QS3 if they preferred not to answer or if they indicated “Male” or “Female” and their response did not match the gender on file with the survey vendor.

[6] Respondents were screened out at QS4 if they selected “Prefer not to answer” or “Don’t know / Unsure.”

[7] Respondents were screened out at QS5 if they or anyone else in their household has ever been employed by a law firm, legal services organization, or court.

[8] Respondents were screened out at QS6 if they selected a response option other than “South”.

[9] Respondents were screened out at QS7 if they indicated that they used the “Odeon” browser.

[10] Respondents were screened out at QS8 if they did not indicate that they have used “Private Browsing Mode” in the past six months.

Source:

2203704.xlsx

Exhibit 3.1**Consumer Perceptions and Expectations Survey
Response Counts**

Q4. “While in [MODE NAME] mode, do the companies that own the websites you visited during the session receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?”

	Chrome		Safari		Firefox		All Browsers	
	#	%	#	%	#	%	#	%
Response Options								
Companies that own the websites I visited during the session do not receive the data from my [MODE NAME] session (1)								
Companies that own the websites I visited during the session probably do not receive the data from my [MODE NAME] session (2)								
It is uncertain whether companies that own the websites I visited during the session receive the data from my [MODE NAME] session (3)								
Companies that own the websites I visited during the session probably receive the data from my [MODE NAME] session (4)								
Companies that own the websites I visited during the session do receive the data from my [MODE NAME] session (5)								
I don't feel I have enough information to answer this question								
Total								

Source:

2203704.xlsx.

Exhibit 3.2**Consumer Perceptions and Expectations Survey
Response Counts**

Q5. “While in [MODE NAME] mode, does your internet service provider receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?”

	Chrome		Safari		Firefox		All Browsers	
	#	%	#	%	#	%	#	%
<i>Response Options</i>								
My internet service provider does not receive the data from my [MODE NAME] session (1)								
My internet service provider probably does not receive the data from my [MODE NAME] session (2)								
It is uncertain whether my internet service provider receives the data from my [MODE NAME] session or not (3)								
My internet service provider probably receives the data from my [MODE NAME] session (4)								
My internet service provider does receive the data from my [MODE NAME] session (5)								
I don't feel I have enough information to answer this question								
Total								

Source:

2203704.xlsx.

Exhibit 3.3**Consumer Perceptions and Expectations Survey
Response Counts**

Q6. “While in [MODE NAME] mode, do companies that provide analytics and advertising services to websites you visited during the session receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?”

	Chrome		Safari		Firefox		All Browsers	
	#	%	#	%	#	%	#	%
<i>Response Options</i>								
Companies that provide analytics and advertising services to websites I visited during the session do not receive the data from my [MODE NAME] session (1)								
Companies that provide analytics and advertising services to websites I visited during the session probably do not receive the data from my [MODE NAME] session (2)								
It is uncertain whether companies that provide analytics and advertising services to websites I visited during the session receive the data from my [MODE NAME] session or not (3)								
Companies that provide analytics and advertising services to websites I visited during the session probably receive the data from my [MODE NAME] session (4)								
Companies that provide analytics and advertising services to websites I visited during the session do receive the data from my [MODE NAME] session (5)								
I don't feel I have enough information to answer this question								
Total								

Source:

2203704.xlsx.

Exhibit 4.1

Consumer Perceptions and Expectations Survey
Proportions of ‘Low’ Responses

Q4-Q6. “While in [MODE NAME] mode, [do people or companies] receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?”

	Chrome n = 270	All n = 531
<u>Companies that provide analytics and advertising services to websites you visited</u> ^{[1][2]}		
Proportion of respondents who answered 1 ^[1]		
p-value at .3 threshold ^{[5][6]}		
Proportion of respondents who answered 1 or 2 ^[1]		
p-value at .5 threshold ^{[5][7]}		
<u>Internet service provider</u> ^{[1][3]}		
Proportion of respondents who answered 1 ^[1]		
p-value at .3 threshold ^{[5][6]}		
Proportion of respondents who answered 1 or 2 ^[1]		
p-value at .5 threshold ^{[5][7]}		
<u>Companies that own the websites you visited</u> ^{[1][4]}		
Proportion of respondents who answered 1 ^[1]		
p-value at .3 threshold ^{[5][6]}		
Proportion of respondents who answered 1 or 2 ^[1]		
p-value at .5 threshold ^{[5][7]}		

Notes:

[1] Numerical values correspond to response options as follows: 1 = “[people or companies] do not receive the data from my [MODE NAME] session,” 2 = “[people or companies] probably do not receive the data from my [MODE NAME] session,” 3 = “It is uncertain whether [people or companies] receive the data from my [MODE NAME] session or not,” 4 = “[people or companies] probably receive the data from my [MODE NAME] session,” 5 = “[people or companies] do receive the data from my [MODE NAME] session.”

[2] Q6: Pipe in “do companies that provide analytics and advertising services to websites you visited during the session” for “[do people or companies].”

[3] Q5: Pipe in “ does your internet service provider” for “[do people or companies].”

[4] Q4: Pipe in “do the companies that own the websites you visit” for “[do people or companies].”

[5] Symbols ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels respectively.

[6] One-tailed, one sample equality test of proportions testing whether proportion of respondents who selected “[people or companies] do not receive the data from my [MODE NAME] session” is less than a hypothesized null threshold.

[7] One-tailed, one sample equality test of proportions testing whether proportion of respondents who selected “[people or companies] do not receive the data from my [MODE NAME] session” or “[people or companies] probably do not receive the data from my [MODE NAME] session” is less than a hypothesized null threshold.

[8] Responses of “I don't feel I have enough information to answer this question” are included in all calculations.

Exhibit 4.2

Consumer Perceptions and Expectations Survey
Proportions of ‘Low’ Responses vs Proportions of ‘High’ Responses

Q4-Q6. “While in [MODE NAME] mode, [do people or companies] receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?”

	Chrome n = 270	All n = 531
<u>Companies that provide analytics and advertising services to websites you visited</u> ^{[1][2]}	<div></div>	
Proportion of respondents who answered 1 or 2 ^[1]		
Proportion of respondents who answered 4 or 5 ^[1]		
Equivalence of proportions p-value ^{[5][6]}		
<u>Internet service provider</u> ^{[1][3]}		
Proportion of respondents who answered 1 or 2 ^[1]		
Proportion of respondents who answered 4 or 5 ^[1]		
Equivalence of proportions p-value ^{[5][6]}		
<u>Companies that own the websites you visited</u> ^{[1][4]}		
Proportion of respondents who answered 1 or 2 ^[1]		
Proportion of respondents who answered 4 or 5 ^[1]		
Equivalence of proportions p-value ^{[5][6]}		

Notes:

[1] Numerical values correspond to response options as follows: 1 = “[people or companies] do not receive the data from my [MODE NAME] session,” 2 = “[people or companies] probably do not receive the data from my [MODE NAME] session,” 3 = “It is uncertain whether [people or companies] receive the data from my [MODE NAME] session or not,” 4 = “[people or companies] probably receive the data from my [MODE NAME] session,” 5 = “[people or companies] do receive the data from my [MODE NAME] session.”

[2] Q6: Pipe in “do companies that provide analytics and advertising services to websites you visited during the session” for “[do people or companies].”

[3] Q5: Pipe in “ does your internet service provider” for “[do people or companies].”

[4] Q4: Pipe in “do the companies that own the websites you visit” for “[do people or companies].”

[5] Symbols ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels respectively.

[6] One-tailed, two sample equality test of proportions testing whether proportion of respondents who selected “[people or companies] do not receive this information” or “[people or companies] probably do not receive this information” is less than proportion of respondents who selected “[people or companies] probably receive the data from my [MODE NAME] session” or “[people or companies] do receive the data from my [MODE NAME] session.”

[7] Responses of “I don't feel I have enough information to answer this question” are included in all calculations.

Exhibit 5**Interpretation Survey Respondent Demographics**

Demographic	Starts^[1]		At QS8^[2]		Completes^[3]	
	N	%	N	%	N	%
<i>Age</i>						
18-29						
30-39						
40-49						
50-59						
60+						
Total						
<i>Gender</i>						
Female						
Male						
Other						
Total						
<i>U.S. Region</i>						
Midwest						
Northeast						
South						
West						
Total						

Notes:

[1] Age, gender, and U.S. region distributions are calculated using the “NexusAge,” “NexusGender,” and “NexusRegion” variables, respectively. Responses with a missing value for any of the “NexusAge,” “NexusGender,” and “NexusRegion” variables are excluded.

[2] Age, gender, and U.S. region distributions are calculated using the “QS2,” “QS3,” and “Region_US” variables, respectively, for all respondents who provided a response to “QS8. In the past six months, which of the following features, if any, have you used on your internet browser(s)?”

[3] Age, gender, and U.S. region distributions are calculated using the “QS2,” “QS3,” and “Region_US” variables, respectively, for all respondents who completed the survey and are in the final analytical sample.

[4] All response options that do not result in termination from the survey are shown.

Source:

2203487.xlsx

Exhibit 6

Interpretation Survey Response Statistics

Status	N	%
<i>Total Clicks</i> ^[1]		
<i>Completed Survey</i>		
Excluded by Survey Vendor ^[2]		
Final Analytical Sample		
<i>Screened Out of Survey</i>		
Overquota ^[3]		
RVID Dupes ^[4]		
At QS0 (Captcha)		
At QS2 (Age) / QS3 (Gender) ^[5]		
At QS4 (State) ^[6]		
At QS5 (Employment) ^[7]		
At QS6 (Attention) ^[8]		
At QS7 (Browser) ^[9]		
At QS8 (Browser Features) ^[10]		
<i>Dropped Out of Survey</i>		
During Screener		
After Screener		

Notes:

[1] The total number of people who clicked on the survey link is the sum of “Completed Survey,” “Screened Out of Survey,” and “Dropped Out of Survey.”

[2] Respondents were excluded from the final analytical sample by the survey vendor if they failed standard quality checks conducted by the survey vendor.

[3] Respondents were screened out of the survey if they exceeded the survey quotas.

[4] Duplicate responses were removed.

[5] Respondents were screened out at QS2 if they were under 18 years old, preferred not to answer, or if the age they indicated did not match the age on file with the survey vendor. Respondents were screened out at QS3 if they preferred not to answer or if they indicated “Male” or “Female” and their response did not match the gender on file with the survey vendor.

[6] Respondents were screened out at QS4 if they selected “Prefer not to answer” or “Don’t know / Unsure.”

[7] Respondents were screened out at QS5 if they or anyone else in their household has ever been employed by a law firm, legal services organization, or court.

[8] Respondents were screened out at QS6 if they selected a response option other than “South”.

[9] Respondents were screened out at QS7 if they indicated that they used the “Odeon” browser.

[10] Respondents were screened out at QS8 if they did not indicate that they have used “Private Browsing Mode” in the past six months.

Source:

2203487.xlsx

Exhibit 7.1**Interpretation Survey
Response Counts**

Q10. “Based on the screens that you reviewed, please select one of the following regarding URLs of the sites you visit during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):”

	Splash Screen Only		Splash Screen with Policies with Policies (Highlighted)		Splash Screen with New Account Creation Agreement		Splash Screen with Consent Bump Agreement and FAQ Page	
	#	%	#	%	#	%	#	%
Response Options								
Google does not receive this information (1)								
Google probably does not receive this information (2)								
It is uncertain whether Google receives this information or not (3)								
Google probably receives this information (4)								
Google does receive this information (5)								
I don't feel I have enough information to answer this question								
Total by Group								

Source:

2203487.xlsx.

Exhibit 7.2**Interpretation Survey
Response Counts**

Q11. “Based on the screens that you reviewed, please select one of the following regarding IP address during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):”

	Splash Screen Only		Splash Screen with Policies (Highlighted)		Splash Screen with New Account Creation Agreement		Splash Screen with Consent Bump Agreement and FAQ Page	
	#	%	#	%	#	%	#	%
Response Options								
Google does not receive this information (1)								
Google probably does not receive this information (2)								
It is uncertain whether Google receives this information or not (3)								
Google probably receives this information (4)								
Google does receive this information (5)								
I don't feel I have enough information to answer this question								
Total								

Source:

2203487.xlsx.

Exhibit 7.3**Interpretation Survey
Response Counts**

Q12. “Based on the screens that you reviewed, please select one of the following regarding cookies placed on your browser during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):”

	Splash Screen Only		Splash Screen with Policies (Highlighted)		Splash Screen with New Account Creation Agreement		Splash Screen with Consent Bump Agreement and FAQ Page	
	#	%	#	%	#	%	#	%
<i>Response Options</i>								
Google does not receive this information (1)								
Google probably does not receive this information (2)								
It is uncertain whether Google receives this information or not (3)								
Google probably receives this information (4)								
Google does receive this information (5)								
I don't feel I have enough information to answer this question								
Total								

Source:

2203487.xlsx.

Exhibit 8.1

Interpretation Survey Proportions of “Low” Responses by Group

Q10-12 “Based on the screens that you saw, please select one of the following regarding [data types] during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):”

	Splash Screen Only	Splash Screen with Policies (Highlighted)	Splash Screen with New Account Creation Agreement	Splash Screen with Consent Bump Agreement and FAQ Page
	n = 254	n = 254	n = 252	n = 253
<u>URLs of the sites you visit</u>				
Proportion of respondents who answered 1 ^[1]				
p-value at .3 threshold ^{[2][3]}				
Proportion of respondents who answered 1 or 2 ^[1]				
p-value at .5 threshold ^{[2][4]}				
<u>IP address</u>				
Proportion of respondents who answered 1 ^[1]				
p-value at .3 threshold ^{[2][3]}				
Proportion of respondents who answered 1 or 2 ^[1]				
p-value at .5 threshold ^{[2][4]}				
<u>Cookies placed on your browser</u> ^[1]				
Proportion of respondents who answered 1 ^[1]				
p-value at .3 threshold ^{[2][3]}				
Proportion of respondents who answered 1 or 2 ^[1]				
p-value at .5 threshold ^{[2][4]}				

Notes:

[1] Numerical values correspond to response options as follows: 1 = “Google does not receive this information,” 2 = “Google probably does not receive this information,” 3 = “It is uncertain whether Google receives this information or not,” 4 = “Google probably receives this information,” 5 = “Google does receive this information.”

[2] Symbols ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels respectively.

[3] One-tailed, one sample equality test of proportions testing whether proportion of respondents who selected “Google does not receive this information” is less than a hypothesized null threshold.

[4] One-tailed, one sample equality test of proportions testing whether proportion of respondents who selected “Google does not receive this information” or “Google probably does not receive this information” is less than a hypothesized null threshold.

[5] Responses of “I don't feel I have enough information to answer this question” are included in the denominator for the calculations of proportions.

Source:

2203487.xlsx.

Exhibit 8.2

Interpretation Survey

Proportions of “Low” Responses vs Proportions of “High” Responses

Q10-12 “Based on the screens that you saw, please select one of the following regarding [data types] during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):”

	Splash Screen Only	Splash Screen with Policies (Highlighted)	Splash Screen with New Account Creation Agreement	Splash Screen with Consent Bump Agreement and FAQ Page
	n = 254	n = 254	n = 252	n = 253
<u>URLs of the sites you visit</u>				
Proportion of respondents who answered 1 or 2 ^[1]				
Proportion of respondents who answered 4 or 5 ^[1]				
Equivalence of proportions p- value ^{[2][3]}				
<u>IP address</u>				
Proportion of respondents who answered 1 or 2 ^[1]				
Proportion of respondents who answered 4 or 5 ^[1]				
Equivalence of proportions p- value ^{[2][3]}				
<u>Cookies placed on your browser</u> ^[1]				
Proportion of respondents who answered 1 or 2 ^[1]				
Proportion of respondents who answered 4 or 5 ^[1]				
Equivalence of proportions p- value ^{[2][3]}				

Notes:

[1] Numerical values correspond to response options as follows: 1 = “Google does not receive this information,” 2 = “Google probably does not receive this information,” 3 = “It is uncertain whether Google receives this information or not,” 4 = “Google probably receives this information,” 5 = “Google does receive this information.”

[2] Symbols ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels respectively.

[3] One-tailed, two sample equality test of proportions testing whether proportion of respondents who selected “Google does not receive this information” or “Google probably does not receive this information” is less than the proportion of respondents who selected “Google does receive this information” or “Google probably receives this information.”

[4] Responses of “I don't feel I have enough information to answer this question” are included in the denominator for the calculations of proportions.

Source:

2203487.xlsx.

Exhibit 9**Likelihood of Use Survey Respondent Demographics**

Demographic	Starts^[1]		At QS8^[2]		Completes^[3]	
	N	%	N	%	N	%
<i>Age</i>						
18-29						
30-39						
40-49						
50-59						
60+						
Total						
<i>Gender</i>						
Female						
Male						
Other						
Total						
<i>U.S. Region</i>						
Midwest						
Northeast						
South						
West						
Total						

Notes:

[1] Age, gender, and U.S. region distributions are calculated using the “NexusAge,” “NexusGender,” and “NexusRegion” variables, respectively. Responses with a missing value for any of the “NexusAge,” “NexusGender,” and “NexusRegion” variables are excluded.

[2] Age, gender, and U.S. region distributions are calculated using the “QS2,” “QS3,” and “Region_US” variables, respectively, for all respondents who provided a response to “QS8. In the past six months, which of the following features, if any, have you used on your internet browser(s)?”

[3] Age, gender, and U.S. region distributions are calculated using the “QS2,” “QS3,” and “Region_US” variables, respectively, for all respondents who completed the survey and are in the final analytical sample.

[4] All response options that do not result in termination from the survey are shown.

Source:

2203523.xlsx

Exhibit 10

Likelihood of Use Survey Response Statistics

Status	N	%
<i>Total Clicks</i> ^[1]		
<i>Completed Survey</i>		
Excluded by Survey Vendor ^[2]		
Final Analytical Sample		
<i>Screened Out of Survey</i>		
Overquota ^[3]		
RVID Dupes ^[4]		
At QS0 (Captcha)		
At QS2 (Age) / QS3 (Gender) ^[5]		
At QS4 (State) ^[6]		
At QS5 (Employment) ^[7]		
At QS6 (Attention) ^[8]		
At QS7 (Browser) ^[9]		
At QS8 (Browser Features) ^[10]		
<i>Dropped Out of Survey</i>		
During Screener		
After Screener		

Notes:

- [1] The total number of people who clicked on the survey link is the sum of “Completed Survey,” “Screened Out of Survey,” and “Dropped Out of Survey.”
- [2] Respondents were excluded from the final analytical sample by the survey vendor if they failed standard quality checks conducted by the survey vendor.
- [3] Respondents were screened out of the survey if they exceeded the survey quotas.
- [4] Duplicate responses were removed.
- [5] Respondents were screened out at QS2 if they were under 18 years old, preferred not to answer, or if the age they indicated did not match the age on file with the survey vendor. Respondents were screened out at QS3 if they preferred not to answer or if they indicated “Male” or “Female” and their response did not match the gender on file with the survey vendor.
- [6] Respondents were screened out at QS4 if they selected “Prefer not to answer” or “Don’t know / Unsure.”
- [7] Respondents were screened out at QS5 if they or anyone else in their household has ever been employed by a law firm, legal services organization, or court.
- [8] Respondents were screened out at QS6 if they selected a response option other than “South”.
- [9] Respondents were screened out at QS7 if they indicated that they used the “Odeon” browser.
- [10] Respondents were screened out at QS8 if they did not indicate that they have used “Private Browsing Mode” in the past six months.

Source:

2203523.xlsx

Exhibit 11**Likelihood of Use Survey
Mean and 95 % Confidence Interval**

Q5. “How likely or unlikely are you to use the Chrome browser in Incognito mode for your online research about the sensitive topic mentioned in the previous scenario?”

Alternative Language Group				Actual Language Group				Mean Difference t-test p-value ^{[2][3]}
95% Confidence Interval				95% Confidence Interval				
N	Mean	Lower Bound	Upper Bound	N	Mean	Lower Bound	Upper Bound	

Notes:

[1] Numerical values correspond to response options as follows: 1 = “Unlikely to use the Chrome browser in Incognito mode,” 2 = “Somewhat unlikely to use the Chrome browser in Incognito mode,” 3 = “Neither likely nor unlikely to use the Chrome browser in Incognito mode,” 4 = “Somewhat likely to use the Chrome browser in Incognito mode,” 5 = “Likely to use the Chrome browser in Incognito mode.”

[2] Symbols ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels respectively.

[3] Two-tailed Student's t-test.

[4] Responses of “I do not feel I have enough information to answer this question” are excluded from all calculations.

Source:

2203523.xlsx.

Exhibit 12
Likelihood of Use Survey
Response Counts

Q5. “How likely or unlikely are you to use the Chrome browser in Incognito mode for your online research about the sensitive topic mentioned in the previous scenario?”

Response Options	Alternative Language		Actual Language	
	#	%	#	%
Unlikely to use the Chrome browser in Incognito mode (1)				
Somewhat unlikely to use the Chrome browser in Incognito mode (2)				
Neither likely nor unlikely to use the Chrome browser in Incognito mode (3)				
Somewhat likely to use the Chrome browser in Incognito mode (4)				
Likely to use the Chrome browser in Incognito mode (5)				
I don’t feel I have enough information to answer this question				
Total				

Source:
2203523.xlsx.

Exhibit 13**Likelihood of Use Survey**

Q5. “How likely or unlikely are you to use the Chrome browser in Incognito mode for your online research about the sensitive topic mentioned in the previous scenario?”

	Alternative Language Group	Actual Language Group	Alternative vs. Actual Language proportion test <i>p</i> -value ^{[1][2]}
	n = 502	n = 503	
Proportion who responded 5 ^[3]	████	████	████
Proportion who responded 4 or 5 ^[4]	████	████	████

Notes:

[1] Numerical values correspond to response options as follows: 1 = “Unlikely to use the Chrome browser in Incognito mode,” 2 = “Somewhat unlikely to use the Chrome browser in Incognito mode,” 3 = “Neither likely nor unlikely to use the Chrome browser in Incognito mode,” 4 = “Somewhat likely to use the Chrome browser in Incognito mode,” 5 = “Likely to use the Chrome browser in Incognito mode.”

[2] Symbols ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels respectively.

[3] Two-tailed, two-sample equality of proportion test comparing proportion of respondents who selected “Likely to use the Chrome browser in Incognito mode” between the alternative and actual language groups.

[4] Two-tailed, two-sample equality of proportion test comparing proportion of respondents who selected “Likely to use the Chrome browser in Incognito mode” or “Somewhat likely to use the Chrome browser in Incognito mode” between the alternative and actual language groups.

[5] Responses of “I do not feel I have enough information to answer this question” are included in all calculations.

Source:

2203523.xlsx.

APPENDIX A

CURRICULUM VITAE

On Amir

Rady School of Management
University of California, San Diego
Wells Fargo Hall
9500 Gilman Drive, MC 0553
La Jolla, CA 92093-0553
(858) 534-2023
oamir@ucsd.edu

Education

Ph.D., Management Science, Marketing, Massachusetts Institute of Technology
B.S., Computer Science, Israeli Open University, Tel Aviv

Academic Employment

2020 – present	Wolfe Family Presidential Endowed Chair in Life Sciences, Innovation, and Entrepreneurship, Professor of Marketing Rady School of Management, University of California, San Diego,
2018 - 2021	Associate Dean of Programs Rady School of Management, University of California, San Diego
2018 – 2020	Professor of Marketing Rady School of Management, University of California, San Diego
2010 – 2017	Associate Professor of Marketing Rady School of Management, University of California, San Diego
2012 – 2013	Visiting Associate Professor of Marketing Kellogg School of Management, Northwestern University
2011 – 2012	Visiting Professor of Marketing Arison School of Management, IDC
2005 – 2010	Assistant Professor of Marketing Rady School of Management, University of California, San Diego
2003 – 2005	Assistant Professor of Marketing School of Management, Yale University

Other Employment

2018 - present	Chief Behavioral Science Officer, Fiverr, Inc.
1991 – 1999	Israeli Air Force

Publications

- Kristen Duke & On Amir (forthcoming). The Importance of Selling Formats: When Integrating Purchase and Quantity Decisions Increases Sales, *Marketing Science*.
- Evan Weingarten, Kristen Duke, Wendy liu, Rrebecca Hamilton, On Amir, Gil Apple, Moran Cerf, Joe Goodman, Andrea Morales, Ed O'Brian, Jordi Quidbach, & Monic Sun (forthcoming). What Makes People Happy? Decoupling the Experiential-Material Continuum, *Journal of Consumer Psychology*.
- Alicea Lieberman, Juliana Schroeder, & On Amir (forthcoming). A Voice Inside My Head: The Psychological and Behavioral Consequences of Auditory Technologies, Organization Behavior and Human Decision Processes.
- Alicea Lieberman, Andera Morales, & On Amir (forthcoming). Tangential Immersion: Increasing Consumer Persistence, *Journal or Consumer Research*.
- Coby Morvinski, Silvia Saccardo, & On Amir (forthcoming). Mis-Nudging Morality, *Management Science*
- Elanor Williams, Allie Lieberman, & On Amir (2021). Perspective Neglect: Inadequate Perspective Taking Limits Coordination, Judgment and Decision Making, 16 (4), 898-931.
- Weingarten, Evan, Michael W. Meyer, Amit Ashkenazi, & On Amir (2020). Experts Outperform Technology in Creative Markets, She Ji: The Journal of Design, Economics, and Innovation.
- Alicea Lieberman , Kristen Duke, & On Amir (2019). How Incentive Framing Can Harness the Power of Norms, Organizational Behavior & Human Decision Processes.
- Kristen E. Duke & On Amir (2019). Guilt Dynamics: Consequences of Temporally Separating Decisions and Actions, Journal of Consumer Research.
- On Amir, Nina Mazar, & Dan Ariely (2019). Replicating the Effect of Moral Standards Accessibility on Dishonesty, Author's Response to the Replication Process, Advances in Methods and Practices in Psychological Science.
- Raphael Thomadsen, Robert P. Roederkerk, On Amir, Neeraj Arora, Bryan Bollinger, Karsten Hansen, Leslie John, Wendy Liu, Aner Sela, Vishal Singh, K. Sudhir, & Wendy Wood (2018). How Context Affects Choice, Customer Needs and Solutions, 1-2, 3-14.
- Kristen Duke, Kelly Goldsmith, & On Amir (2018). Is the Preference for Certainty Always so Certain?, Journal of the Association of Consumer Research, 3(1), 63-80.
- Coby Morvinski & On Amir (2018). Liking Goes with Liking: An Intuitive Congruence between Preference and Prominence, Journal of Experimental Psychology: Learning, Memory, and Cognition.
- Daniella Kupor, Wendy Liu, & On Amir (2017). The Effect of an Interruption on Risk Decisions, Journal of Consumer Research, 44 (6), 1205–1219.

- Andrea Morales, On Amir, & Leonard Lee (2017). A Tutorial in Consumer Research: Keeping it Real in Experimental Research – Understanding When, Where, and How to Enhance Realism and Measure Consumer Behavior, Journal of Consumer Research, 44 (2), 465–476.
- Kerem Shuval, Tammy Leonard, Jeffrey Drope, David L. Katz, Alpa V. Patel, Melissa Maitin-Shepard, On Amir, & Amir Grinstein, (2017). Physical Activity Counseling in Primary Care: Insights from Public Health & Behavioral Economics, CA: A Cancer Journal for Clinicians, 67(3), 233-244.
- Coby Morvinski, On Amir, & Eitan Muller (2017). “Ten Million Readers Can’t Be Wrong!,” or Can They? On the Role of Information About Adoption Stock in New Product Trial, Marketing Science, 36(2), 290-300.
- On Amir and Orly Lobel (2014). How Non-Competes Stifle Performance, Harvard Business Review, 92 (1/2), p.26.
- On Amir and Orly Lobel (2013). Driving Performance: A Growth Theory of Non-Compete Law, Stanford Technology Law Review, 16 (3), spring.
- On Amir and Orly Lobel (2012). Liberalism and Lifestyle: Informing Regulatory Governance with Behavioral Research, European Journal of Risk Regulation, 1, 17-25.
- Kelly Goldsmith and On Amir (2010). Can Uncertainty Improve Promotions, Journal of Marketing Research, December, 1070-1077.
- Leonard Lee, On Amir, and Dan Ariely (2009). In Search of Homo Economicus: Cognitive Noise and the Role of Emotion in Preference Consistency, Journal of Consumer Research, 36, 173-187.
- Anastasiya Pocheptsova, On Amir, Ravi Dhar, and Roy Baumeister (2009). Deciding without Resources: Psychological Depletion and Choice in Context, Journal of Marketing Research, June, 46 (3), 344-355.
- On Amir and Dan Ariely (2008). Resting on Laurels: The Effects of Discrete Progress Markers as SubGoals on Task Performance and Preferences, Journal of Experimental Psychology: Learning, Memory, & Cognition, 34 (5), 1158-1171.
- On Amir and Orly Lobel (2008). Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy, Columbia Law Review, December, 2098-2138.
- Nina Mazar, On Amir, and Dan Ariely (2008). The Dishonesty of Honest People: A Theory of Self-Concept Maintenance, Journal of Marketing Research, November, 45 (6), 633-644, (lead article).
- *Media coverage: NY Times Science section (Nov. 20th, 2007)
- *HBR Breakthrough Ideas for 2008.
- *Winner of the 2012 William F. O’Dell award.
- Nina Mazar, On Amir, and Dan Ariely (2008). More Ways to Cheat – Expanding the Scope of Dishonesty, Journal of Marketing Research, November, 45 (6), 651-653.
- On Amir and Jonathan Levav (2008). Preference construction versus choice construction: The instability of preferences learned in context. Journal of Marketing Research, April, 145-158.

- On Amir, Ziv Carmon, and Dan Ariely (2008). The Dissociation between Monetary Assessments and Predicted Utility, Marketing Science, 27 (6), 1055-1064.
- On Amir and Dan Ariely (2007). Decisions by Rules: The Case of Unwillingness to Pay for Beneficial Delays. Journal of Marketing Research, February, 142-152.
- On Amir, Dan Ariely, Alan Cooke, David Dunning, Nicholas Epley, Botond Koszegi, Donald Lichtenstein, Nina Mazar, Sendhil Mullainathan, Drazen Prelec, Eldar Shafir, Jose Silva (2005). Behavioral Economics, Psychology, and Public Policy. Marketing Letters (Special Issue for the Sixth Choice Symposium), 16:3/4, 443-454.

Other Publications

- Alicia Lieberman, Andrea C. Morales, and On Amir (2019). Beyond the Lab: Using Data from the Field to Increase Research Validity, in Handbook of Research Methods in Consumer Psychology, Frank R. Kardes, Paul M. Herr, and Nobert Schwarz, Editors, Routledge.
- “Is the Mind like a Muscle?” Scientific American, Mind, online edition.
- “Making Consumption Decisions by Following Personal Rules”, In Inside Consumption: Frontiers of Research on Consumer Motives, Goals, and Desires. Ratti Ratneshwar & David Mick (eds.), Routledge Press 2005. (with Dan Ariely & Orly Lobel)
- On Amir & Ariely Dan (2001) e-Rationality: Rationality in Electronic Environments. In S.M. Broniarczyk, & K. Nakamoto, Advances in Consumer Research, 24. Provo, UT.
- On Amir (2004) Alternative Decision Processes in Consumption: Personal Rules, Rationales, and Identity Maintenance, Advances in Consumer Research, XXXI, 26.
-

Selected Research in Progress

- Goal Proximity, Social Information, and Giving: When Norms Backfire (with Coby Morvinski and Matt Lupoli) – revision invited Journal of Marketing
- The Entrenchment Effect (with Allie Lieberman and Ziv Carmon) – Under review at Journal of Marketing Research
- How Different Encoding Processes Influence Confidence (with Giulia Maimone and Uma Karmarkar) – Under review at Journal of Experimental Psychology: Learning, Memory, and Cognition
- The most Influential Age Hypothesis: Does the Self Cause Predictable Preferences (with Nina Mazar) – revision invited Management Science.
- Reference Escalation in Sequential Choice (with Coby Morvinski) – under review Marketing Science
- My Experience or My Expectations: The Effect of Expectations as Reference Points on Evaluations of Experiential Purchases (with Amar Cheema, Davide Proserpio, and Stephanie Tully) – under review Journal of Consumer Research.

Risk Aversion as Self Control (with Orly Lobel and Kelly Goldsmith)

Driving Pro-Environmental Choice (with Elizabeth A. Keenan and Ayelet Gneezy)

Risk Management for the Future: Age, Risk, and Choice Architecture (with Orly Lobel)

Honors and Awards

MSI Research Award: “Do Experts Outperform Artificial Intelligence? The Case of Logo Design,” # 4000657, 2019

MSI Research Award: “Quantity Integration,” #4000477, 2018

MSI Research Award: “New Product Adoption,” #4-1842, 2014

Robert Wood Johnson Foundation research grant for Healthy Choices.

MSI Junior Scholars 2009

“Most Valuable Professor Award,” voted by the Flex MBA class of 2007

“Most Valuable Professor Award,” voted by the Fulltime MBA class of 2007

MSI Research Award: “Motivating Discounts: Price Motivated Consumer Reasoning”, #4-1273, 2004

AMA - Sheth Doctoral Consortium Fellow, 2002

MSI Research Award: “Information Aversion: Indecision, Procrastination, and Consumer Choice Online”, #4-1141, 2001

CS Holding Fellowship, 2001

Walter A Rosenblith Fellowship, 2000

Conference presentations and Invited Talks

University of California, Berkeley, Haas (2015)

University of Toronto, Rotman (2015)

University of Southern California, Marshal (2014)

University of Southern California, Psychology (2013)

University of Pennsylvania, Wharton (2007, 2013)

University of Chicago, Booth (2013)

Northwestern University, Kellogg (2012)

Interdisciplinary Center, Arison (2011)

Tel Aviv University, Recanati, Coller (2008, 2009, 2018)

Stanford University, GSB (2009)

Columbia University, GSB (2009)

University of California, San Diego, Psychology (2005, 2006, 2007, 2008)

University of California, San Diego, Economics (2008)

Erasmus University (2008)

University of Melbourne (2007)

Hebrew University (2007)

Washington University, St. Louis (2007)

University of San Diego, School of Law (2006)

University of California, Los Angeles, Anderson (2004)
Yale University, Psychology (2004)
INSEAD (2004, 2015)
Johns Hopkins University (2017)
NUS (2018)
Ben Gurion University (2018)
HKU (2019)
CUHK (2019)

Association for Consumer Research, 2001, 2003, 2004, 2006, 2007, 2013, 2015, 2016
Society of Consumer Psychology, 2004, 2005, 2008, 2012, 2014, 2015, 2016, 2017
Society for Judgement and Decision Making, 2003, 2005, 2006, 2011, 2015, 2016
Behavioral Decision Making Research in Management, 2002, 2006, 2008, 2014, 2016, 2018
FUR, IESE, 2008
Marketing in Israel, 2002, 2003, 2005
Northeastern Marketing Consortium 2003
Collier Conference of Behavioral Economics 2017, 2019
DMEP 2019

In the Media

Decision Making Traps and Tips for Negotiators, CIIAN, December, 2021
2021's Best Things to Buy on Black Friday, WalletHub, November 19, 2021
'That's not true.' San Diego doctors tackle COVID misinformation sown during county meeting.
San Diego Union Tribune, October 6, 2021
You could be one of three San Diegans who just won \$50,000 in the state's vaccine lottery. San
Diego Union Tribune, June 4, 2021.
California's vaccine incentives program – KPBS, May 2021.
San Diego health systems ask for fewer vaccine doses, turn down extra amid supply glut. San
Diego Union Tribune, May 10, 2021.
2021's Best Pleaces for Valentine's Day. WalletHub, February 2, 2021.
We're getting closer to having a Covid-19 vaccine. Hold onto that mask, though. San Diego
Union Tribune, October 25, 2020
Psychology of Pricing: How to Price you Products Effectively, The Do List, May 23, 2019
The Celebrity of Legalized Cannabis, Pacific San Diego, May 20, 2019
Marines may ditch 'The Few, the Proud' slogan, San Diego Union Tribune, October 11, 2016
The free-shipping wars have begun, San Diego Union Tribune, October 2013
The Young and The Promising, TheMarker magazine, 2011
Consumer Emotional Reactions to Changing Gas Prices, Ch. 10 News, August 2008
Jogging Down the Comeback Trail, San Diego Union Tribune, August 2007
Big Business and the Consumer, Jeremy Seville Comedy Hour, WealthTV 2007
Social Marketing, San Diego Union Tribune, May 2007
Trends in E-commerce, San Diego Business Journal, July 2006
Dating websites, San Diego Union Tribune, April 2006
Database marketing, Campus Technology, November 2005

Christmas shopping, Hartford Courant, December 2004

Service

PhD Committee

Uzma Khan, Yale SOM, 2005
Michael Liersch, UCSD Psychology, 2007
Elizabeth Keenan, UCSD, 2015
Coby Morvinski, UCSD, 2015 (Chair)
Charles Lin, UCSD Economics, 2015
Kristen Duke, UCSD (Chair)
Alicia Lieberman, UCSD (Chair)

Conferences

Program committee for: SCP, ACR, BDRM, SJDM
Conference Chair: SCP 2017

Reviewer

Journal of Marketing Research
Marketing Science
Journal of Experimental Psychology: General
Journal of Economic Psychology
Journal of Consumer Research
American Economic Review
Journal of Consumer Psychology
Memory and Cognition
Psychology and Marketing
Cognition
Journal of Behavioral Decision Making
Organizational Behavior and Human Decision Processes
Psychological Science
Journal of Personality and Social Psychology
Management Science
Journal of Economic Behavior and Organizations
Science

Member

Association for Consumer Research
Association for Consumer Psychology
Society for Judgment and Decision Making
American Psychological Society
American Marketing Association

Teaching Experience

Marketing Management (MBA, Executive)
Analytics in the wild (MBA, Executive)
Consumer Behavior (MBA, Executive)
Market Research (MBA, Executive)
Social Psychology (teaching fellow, Harvard)
E-Commerce Strategy (Executive)
Data Driven Decision Making (Executive)
Customized Executive Programs
Pricing (Executive)
Lab to Market (MBA, Executive)
Intro to Business (Graduate)
Branding (Executive)

Consulting and Executive Teaching Experience

Electronic Arts, HP Inc., Fiverr, Illumina, AAA, USAI, Cubic Corporation, Zimmer Dental, Life Technologies / Thermo Fisher, Intuit, WellBeat, Keiser Permanente, HP Software, Sony Entertainment, Applied Biosystems, Kumbaya App, Joyned, Marble, Themis-Tech.

APPENDIX B

PRIOR TESTIMONY

Prior Testimony

Town of Apple Valley v. Apple Valley Ranchos Water Company, Case No. CIV-DS-1600180, California Superior Court, San Bernardino. Retained by defendant. Deposed.

Arechiga v. Kellwood Company/Vince LLC, Case No. BC500988, Superior Court of California, County of Los Angeles. Retained by defendant. Deposed.

San Diego County Credit Union v. Citizens Equity First Credit Union, Case No. 3:18-CV-00967- GPC-MSB, United States District Court, Southern District of California. Retained by defendant. Deposed & court testimony.

Yamagata v. Reckitt Benckiser LLC, Case No. 3:17-cv-03529-VC, United States District Court, Northern District of California. Retained by defendant. Deposed.

Warner Records, Inc., et al. v. Charter Communications, Inc., Case No. 1:19-cv-00874, United States District Court, District of Colorado. Retained by plaintiffs. Report submitted. Deposed.

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APPENDIX C

MATERIALS RELIED UPON

Materials Relied Upon

Legal Documents

Order Denying Motion to Dismiss, *Chasom Brown et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, March 12, 2021

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Videotaped Deposition of Chasom Brown, January 13, 2022

Videotaped Deposition of Christopher Castillo, February 8, 2022

Virtual Videoconference Video-Recorded Deposition of Monique Trujillo, February 11, 2022

Zoom Videotaped Deposition of William Byatt, December 20, 2021

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GOOG-CABR-04067825-7867

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Screenshot of Chrome Incognito Splash Screen (Desktop), accessed on January 13, 2022

Screenshot of Chrome Incognito Splash Screen (Mobile), accessed on January 13, 2022

Screenshot of Firefox Private Browsing Splash Screen (Desktop), accessed on January 13, 2022

Screenshot of Firefox Private Browsing Splash Screen (Mobile), accessed on January 14, 2022

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Screenshot of New Account Creation Agreement (Mobile), accessed on September 30, 2021

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Other

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Interpretation Survey Data, fielded from March 16 to 21, 2022 (“2203487.xlsx”)

Likelihood of Use Survey Data, fielded from March 16 to 21, 2022 (“2203523.xlsx”)

APPENDIX D

PRETEST MODERATOR

INSTRUMENT

Pretest Moderator Instrument

[Blind-to-the-purpose interviewer at the survey vendor conducts interview over the phone while respondent takes the survey online.]

Q0-1. Hello, can I please speak with [NAME]?

Q0-2A. **[IF THE RESPONDENT PICKS UP THE PHONE]** I am calling from [PANEL] regarding a phone interview that you scheduled with us. Is now still a good time?

- ☐ Yes
- ☐ No **[SCHEDULE CALLBACK]**

Q0-2B. **[IF SOMEONE PICKS UP THE PHONE WHO IS NOT THE RESPONDENT]** I am calling from [PANEL] regarding a phone interview that [NAME] scheduled with us. He/she agreed to offer his/her opinions. Is [NAME] available?

- ☐ Yes
- ☐ No **[SCHEDULE CALLBACK]**

I would like to let you know that this call may be monitored for quality assurance purposes. **[DO NOT WAIT FOR AN ANSWER, CONTINUE WITH THE SURVEY UNLESS THE RESPONDENT SAYS OTHERWISE.]**

Q0-3. [NAME], thank you for your time in taking this survey with us today. To start, are you on your computer or your mobile device right now?

- ☐ Yes
- ☐ No **[WAIT UNTIL THEY ARE ON A COMPUTER OR A MOBILE DEVICE]**

Q0-4. Thank you! In the email you received from us, there is a link to the website you need to go to. Please click on that link. **[IF NEEDED, REMIND RESPONDENT OF THE SENDER OF THE EMAIL, OR RESEND LINK].**

I will be on the phone with you the entire time while you are taking the survey. Please feel free to “think out loud” or bring up anything you would like while you are taking the survey. There is no correct or incorrect way to take this survey. Please be thorough in your response and take as much time as you need. We would like you to approach this exercise as realistically as possible.

Please also note that the first few questions are the same as the ones in the survey you took to qualify for this interview.

You can begin the survey whenever you are ready.

[LET THE RESPONDENT TAKE THE SURVEY AND COMPLETE IT.]

[ASK THE FOLLOWING QUESTIONS AFTER THE RESPONDENT HAS FINISHED THE SURVEY.]

Q1. Did you have any issues while taking the survey?

Q2. Did you think any questions were unclear? If so, which ones and why?

Q3. Did you think any answer options were unclear? If so, which ones and why?

Q4. Did you or did you not have any issues viewing the survey or images in the survey?

Q5. Did you think that the text guiding you through the survey was clear?

Q6. What do you think might be the purpose for conducting this survey?

Q7. What makes you think so?

Q8. Is there anything else you would like to say about the survey?

Thank you very much for your time. We greatly appreciate your help, and we will ensure that you get credit for taking this survey.

APPENDIX E

PRETEST SUMMARY

Summary of Pre-Tests

Follow-up Question	No problems	Some problems	Total
Q1. Did you have any issues while taking the survey? ^[1]	27	3	30
Q2. Did you think any questions were unclear? If so, which ones and why? ^[2]	28	2	30
Q3. Did you think any answer options were unclear? If so, which ones and why? ^[3]	28	2	30
Q4. Did you or did you not have any issues viewing the survey or images in the survey? ^{[4][5]}	26	4	30
Q5. Did you think that the text guiding you through the survey was clear? ^[6]	28	2	30

Notes:

[1] One respondent was worried that they were unable to reach the end of the survey. Another respondent mentioned having an issue with the zoom in feature. A third respondent said that the survey took a long time to load and that it was hard to navigate the screen.

[2] One respondent had issues with the hyperlink on the private browsing splash screen. A second respondent had a question about what was meant by Google receiving information.

[3] One respondent wanted a clarification on whether the question was asking about temporary or permanent storage of cookies. The same respondent who asked about what was meant by Google receiving information in Q2 asked what was meant by “receive” again.

[4] One respondent had trouble loading the first image. The other three respondents who ran into some problems mentioned confusion with the zoom functionality.

[5] One respondent indicated that some of the image text was too small. Since this respondent did not make this comment when answering Q4, this respondent was not counted here.

[6] One respondent mentioned issues reading the text on the Incognito screen because of the dark background, while another respondent mentioned issues reading the text on the Incognito screen because of the small font size.

Source:

Pretest notes.

APPENDIX F.1

CONSUMER PERCEPTIONS AND EXPECTATIONS SURVEY INSTRUMENT

**Consumer Perceptions and Expectations Survey Instrument
Survey Programmer Instructions**

LEGEND:

[PROGRAMMER NOTES IN BOLD CAPS AND BRACKETS]

Notes to respondent in italics

FORMAT: The survey consists of the following sections:

Introduction & Screening (questions labeled QS)
Main Survey Questions (questions labeled Q)
Follow-Up Questions (questions labeled QF)

Overview

[NATIONAL 18+ SAMPLE]

[PANEL MEMBERS SHOULD BE MATCHED TO THE CENSUS ON AGE, GENDER, AND REGION. THAT IS, THE SCREENER SHOULD BE APPLIED TO A SAMPLE REPRESENTATIVE OF THE GENERAL POPULATION IN THE UNITED STATES SO THAT THE FINAL SAMPLE IS REPRESENTATIVE OF THE TARGET POPULATION FOR THE SURVEY (BASED ON ACTUAL QUALIFICATION).]

[TARGET 500 COMPLETES]

[DISABLE THE BROWSER'S "BACK" BUTTON AND DO NOT SHOW A "BACK" BUTTON WITHIN THE SURVEY]

[FORCE RESPONSES TO ALL QUESTIONS]

[NO SURVEY TITLE AND NO QUESTION NUMBER TO BE DISPLAYED TO RESPONDENTS]

[DIGITAL FINGERPRINTING SHOULD BE USED TO AVOID REPEAT PARTICIPATION. DO NOT INVITE RESPONDENTS WHO WERE INVITED TO TAKE OTHER SURVEYS IN THIS MATTER]

[TEXT FOR TERMINATES: "THANK YOU FOR YOUR INTEREST IN OUR STUDY. WE ARE NO LONGER LOOKING FOR PEOPLE WHO MATCH YOUR CHARACTERISTICS. WE APPRECIATE YOUR TIME."]

Introduction and Screening

QS0. Please enter the code exactly as it appears in the image below and then click "Continue" to continue.

[INSERT CAPTCHA; TERMINATE IF NOT CORRECT AFTER FOUR TRIES]

**[IF NO RESPONSE IS SELECTED OR CAPTCHA CODE IS INCORRECT, DISPLAY TEXT
“PLEASE ENTER THE CORRECT CODE.”]**

[NEXT PAGE]

QS1. Thank you for participating in our study. Your opinions are very important to us. If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the “Don't know / Unsure” option or the “I don't feel I have enough information to answer this question” option. There are no right or wrong answers.

Your answers will be kept in strict confidence and the results of this study will not be used to try to sell you anything. Trademarks and logos are all the intellectual property of their respective owners.

If you wear glasses or corrective lenses when using a desktop computer, laptop computer, mobile phone, or tablet, please wear them throughout the survey.

Please do not use the “Back” button of your browser while taking the survey. This survey will take less than 15 minutes of your time. When you are ready to get started, please select the “Continue” button.

[NEXT PAGE]

QS2. What is your age? *(Select only one option)*

[ROTATE ORDER, AS IS AND REVERSE; KEEP “PREFER NOT TO ANSWER” LAST]

- ☐ Under 18 **[TERMINATE]**
- ☐ 18 - 29
- ☐ 30 - 39
- ☐ 40 - 49
- ☐ 50 - 59
- ☐ 60 or older
- ☐ Prefer not to answer **[ANCHOR LAST; TERMINATE]**

[TERMINATE IF AGE DOES NOT MATCH THE VALUE PASSED BY PANEL PROVIDER]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS3. Are you...? *(Select only one option)*

[ROTATE ORDER, AS IS AND REVERSE; KEEP “OTHER” AND “PREFER NOT TO ANSWER” LAST]

- ☐ Male
- ☐ Female
- ☐ Other **[ANCHOR SECOND TO LAST]**
- ☐ Prefer not to answer **[ANCHOR LAST; TERMINATE]**

[TERMINATE IF GENDER DOES NOT MATCH THE VALUES PASSED BY PANEL PROVIDER ONLY IF “MALE” OR “FEMALE” IS SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS4. In which state do you live? *(Select only one option)*

[DROP DOWN MENU OF 50 STATES + DISTRICT OF COLUMBIA; HIDDEN VARIABLE FOR REGION; DETERMINE US CENSUS REGION BASED ON STATE SELECTED. ADD “PREFER NOT TO ANSWER” AND “DON’T KNOW / UNSURE” OPTIONS BELOW DROP DOWN MENU]

- ☐ Prefer not to answer **[ANCHOR SECOND TO LAST; TERMINATE]**
- ☐ Don’t know / Unsure **[ANCHOR LAST; TERMINATE]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT EITHER A STATE, PREFER NOT TO ANSWER, OR DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QS5. Have you or any member of your household ever worked for any of the following types of companies? *(Select all that apply)*

[RANDOMIZE LIST; KEEP “NONE OF THE ABOVE” LAST]

- ☐ A technology company or technology consultancy
- ☐ A law firm, legal services organization, or court **[TERMINATE]**
- ☐ A marketing, market research, or advertising agency
- ☐ An academic institution
- ☐ A construction company
- ☐ A clothing retailer
- ☐ A real estate agency
- ☐ A car dealership
- ☐ A fitness center
- ☐ A healthcare provider or medical office
- ☐ None of the above **[ANCHOR LAST; EXCLUSIVE]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT THE RELEVANT COMPANY TYPE(S) OR NONE OF THE ABOVE.”]

[NEXT PAGE]

QS6. This question is to check your attention. Please select “South” from the answer options below.
(*Select only one option*)

[RANDOMIZE ORDER; KEEP “NONE OF THE ABOVE” AND “DON’T KNOW / UNSURE” LAST]

- ☐ North
- ☐ East
- ☐ South
- ☐ West
- ☐ None of the above [ANCHOR SECOND TO LAST]
- ☐ Don’t know / Unsure [ANCHOR LAST]

[TERMINATE IF “SOUTH” IS NOT SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS7. Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use? (*Select all that apply*)

[RANDOMIZE LIST; KEEP “OTHER” AND “DON’T KNOW / UNSURE” LAST]

- ☐ Internet Explorer
- ☐ Microsoft Edge
- ☐ Safari
- ☐ Brave
- ☐ Google Chrome
- ☐ Mozilla Firefox
- ☐ Opera
- ☐ DuckDuckGo
- ☐ Odeon [TERMINATE]
- ☐ Other (*Please specify*) _____ [ANCHOR SECOND TO LAST]
- ☐ Don’t know / Unsure [ANCHOR LAST; EXCLUSIVE]

[TERMINATE IF ANY COMBINATION OF ANSWER OPTIONS CONTAINING “ODEON” IS SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT EITHER THE INTERNET BROWSER(S) YOU USE OR DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QS8. In the past six months, which of the following features, if any, have you used on your internet browser(s)? (*Select all that apply*)

[RANDOMIZE LIST; KEEP “OTHER” AND “DON’T KNOW / UNSURE” LAST]

- ☐ Private browsing mode
- ☐ Bookmarks
- ☐ Website translator
- ☐ Customized home page
- ☐ Screenshot tool
- ☐ Dark mode for visual display
- ☐ Other (*Please specify*) _____ [ANCHOR SECOND TO LAST]
- ☒ Don’t know / Unsure [ANCHOR LAST; EXCLUSIVE]

[TERMINATE IF “PRIVATE BROWSING MODE” IS NOT SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT THE FEATURES YOU USED ON YOUR INTERNET BROWSER(S) OR SELECT DON’T KNOW / UNSURE.”]

[NEXT PAGE]

Main Questionnaire

[ASSIGN RESPONDENT TO CELLS BASED ON THE FOLLOWING:

FIRST, ASSIGN RESPONDENT TO BROWSER GROUP:

- AMONG “GOOGLE CHROME”, “SAFARI,” AND “MOZILLA FIREFOX” IN QS7, IF RESPONDENT SELECTED ONLY “GOOGLE CHROME,” ASSIGN TO “CHROME” GROUP.
- AMONG “GOOGLE CHROME”, “SAFARI,” AND “MOZILLA FIREFOX” IN QS7, IF RESPONDENT SELECTED ONLY “SAFARI,” ASSIGN TO “SAFARI” GROUP.
- AMONG “GOOGLE CHROME”, “SAFARI,” AND “MOZILLA FIREFOX” IN QS7, IF RESPONDENT SELECTED ONLY “MOZILLA FIREFOX,” ASSIGN TO “FIREFOX” GROUP.
- AMONG “GOOGLE CHROME”, “SAFARI,” AND “MOZILLA FIREFOX” IN QS7, IF RESPONDENT SELECTED MORE THAN ONE OPTIONS, RANDOMIZE BROWSER GROUP AMONG THE SELECTED OPTIONS.
- AMONG “GOOGLE CHROME”, “SAFARI,” AND “MOZILLA FIREFOX” IN QS7, IF RESPONDENT DID NOT SELECT ANY OPTION, RANDOMIZE BROWSER GROUP.

SECOND ASSIGN RESPONDENT TO MOBILE OR DESKTOP VERSION:

- DETECT DEVICE RESPONDENT IS USING.
- IF RESPONDENT IS USING A DESKTOP COMPUTER, LAPTOP COMPUTER, OR TABLET, PRESENT DESKTOP VERSION.
- IF RESPONDENT IS USING A MOBILE DEVICE, PRESENT MOBILE VERSION.

		Mobile or Desktop Version	Completes Breakdown 500 completes
Browser Group	Chrome	Desktop	Minimum 200 completes (with minimum 80 completes in desktop version)
		Mobile	
	Safari	Desktop	Minimum 50 completes
		Mobile	
	Firefox	Desktop	Minimum 50 completes
		Mobile	

Q0. Based on your answers to the previous questions, you have qualified for this survey.

[NEXT PAGE]

[IN THE BRACKETS IN Q1, DISPLAY “TWO IMAGES” OR “THESE IMAGES” IF RESPONDENT IS ASSIGNED TO “CHROME” OR “FIREFOX” GROUP AND “AN IMAGE” OR “THIS IMAGE” IF RESPONDENT IS ASSIGNED TO “SAFARI” GROUP]

- Q1. This survey is about what you expect while in private browsing mode. You will first see [two images / an image]. After, you will be asked to answer a few questions. You will be able to view [these images / this image] again as you answer the questions.

Please do not use your browser’s “Back” button.

If you don’t know an answer to a question or if you don’t have an opinion, please don’t guess. Simply indicate this in your response by selecting the “Don’t know / Unsure” option or the “I don’t feel I have enough information to answer this question” option. There are no right or wrong answers.

[NEXT PAGE]

- Q2. Imagine that you decide to open [MODE NAME] window and see the screen below.
[INSTRUCTIONS]

Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

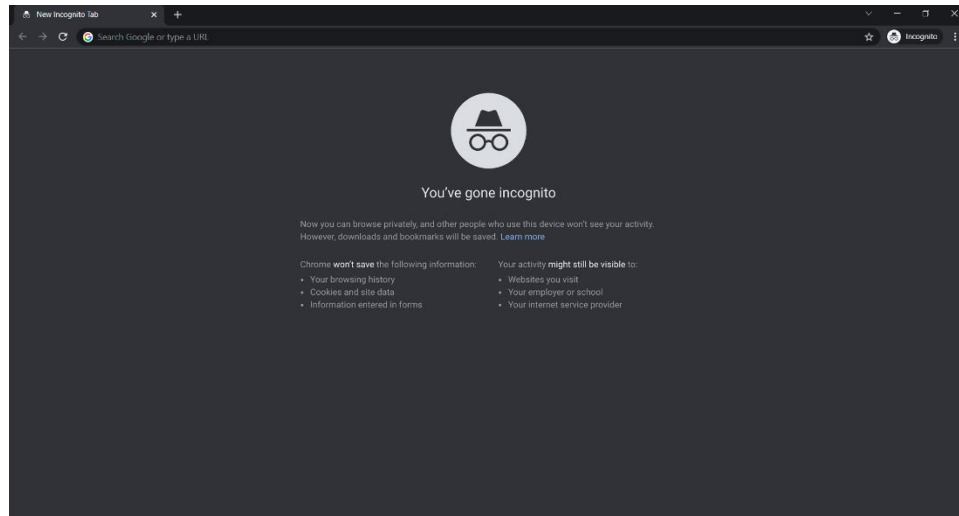
[PIPE INTO “MODE NAME” “an Incognito” IF RESPONDENT IS ASSIGNED TO “CHROME” GROUP OR “a Private Browsing” IF RESPONDENT IS ASSIGNED TO “SAFARI” OR “FIREFOX” GROUPS]

[PIPE INTO “INSTRUCTIONS” “Hyperlinks have been enabled in this image.” IF RESPONDENT IS ASSIGNED TO “CHROME” OR “FIREFOX” GROUPS OR “Hyperlinks and any other clickable elements in this image have been disabled.” IF RESPONDENT IS ASSIGNED TO “SAFARI” GROUP]

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY PRIVATE BROWSING MODE SPLASH SCREEN IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]



[CREATE HYPERLINK TO “LEARN MORE” ON THE IMAGE AND RECORD WHETHER OR NOT RESPONDENT CLICKS ON IT.

- **IF RESPONDENT CLICKS ON “LEARN MORE” BEFORE THE 30-SECOND TIMER EXPIRES, PRESENT A POP UP WITH THE FOLLOWING MESSAGE, “YOU WILL BE TAKEN TO THE NEXT PAGE IN [X] SECONDS.” WHERE X IS A TIMER THAT MIRRORS THE NUMBER OF SECONDS REMAINING IN THE 30-SECOND TIMER FOR THE PAGE. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP. TAKE RESPONDENT TO Q3 WHEN THE TIMER EXPIRES.**
- **IF RESPONDENT CLICKS ON “LEARN MORE” AFTER THE 30-SECOND TIMER EXPIRES, TAKE RESPONDENT TO Q3.**

CLICKING THE “CONTINUE” BUTTON AFTER THE TIMER EXPIRES WILL ALSO TAKE RESPONDENT TO Q3]

[“SAFARI” GROUP WILL NOT HAVE A HYPERLINK AND Q3. RESPONDENT WILL GO TO Q4 AFTER Q2]

[NEXT PAGE]

Q3. You will now see the following screen that would appear if you clicked “Learn more” on the previous page. Hyperlinks and any other clickable elements in this image have been disabled.

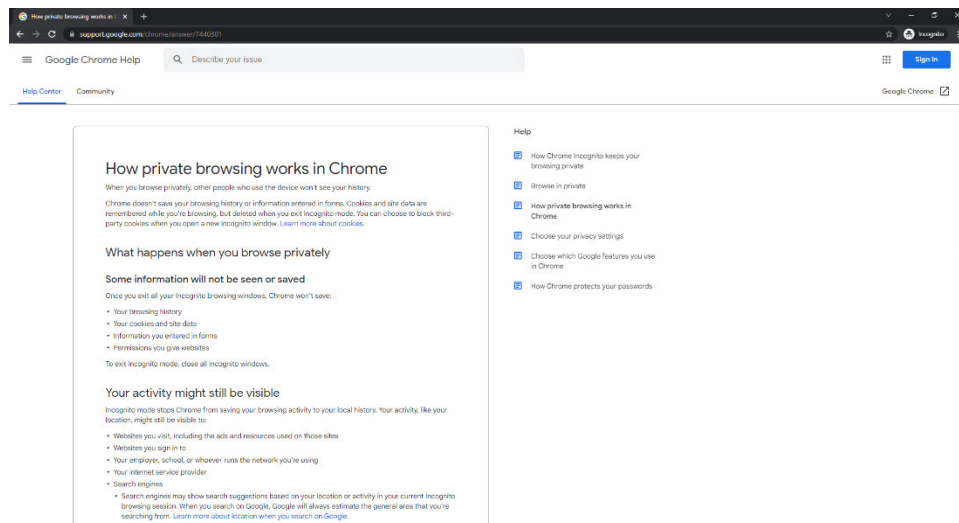
Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY “LEARN MORE” PAGE IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]

[PROGRAM THE “LEARN MORE” PAGE IMAGE TO BE SCROLLABLE WITHIN THE BROWSER WINDOW FRAME]



[NEXT PAGE]

[PRESENT ALL IMAGES THAT THE RESPONDENT REVIEWED AS THUMBNAIL IMAGES AT THE BOTTOM OF THE PAGE FOR Q4-Q6]

[AT THE TOP OF EACH PAGE FOR Q4-Q6, DISPLAY THE FOLLOWING TEXT IF RESPONDENT WAS ASSIGNED TO “SAFARI” GROUP: “(The thumbnail contains the image that you have viewed earlier. You can click on the thumbnail to see the enlarged version of this image.)”. DISPLAY THE FOLLOWING TEXT IF RESPONDENT WAS ASSIGNED TO “CHROME” OR

“FIREFOX” GROUPS: “(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)”]

[FOR Q4-Q6, PIPE INTO “MODE NAME” “Incognito mode” IF RESPONDENT IS ASSIGNED TO “CHROME” GROUP OR “Private Browsing mode” IF RESPONDENT IS ASSIGNED TO “SAFARI” OR “FIREFOX” GROUPS]

[IN Q4-Q6, IF RESPONDENT HOVERS OVER “IP ADDRESS” IN THE QUESTION, DISPLAY THE FOLLOWING TEXT, “Every device connected to the Internet is assigned a number known as an Internet protocol (IP) address. An IP address can often be used to identify the location from which a device is connecting to the Internet.”]

[IN Q4-Q6, IF RESPONDENT HOVERS OVER “URLS OF THE SITES YOU VISIT” IN THE QUESTION, DISPLAY THE FOLLOWING TEXT, “The web addresses of the webpages you visited using the browser.”]

[IN Q4-Q6, IF RESPONDENT HOVERS OVER “COOKIES” IN THE QUESTION, DISPLAY THE FOLLOWING TEXT, “A small file containing a string of characters that is sent to your computer when you visit a website. When you visit the site again, the cookie allows that site to recognize your browser. Cookies may store user preferences and other information.”]

[RANDOMIZE ORDER SHOWN OF Q4-Q6]

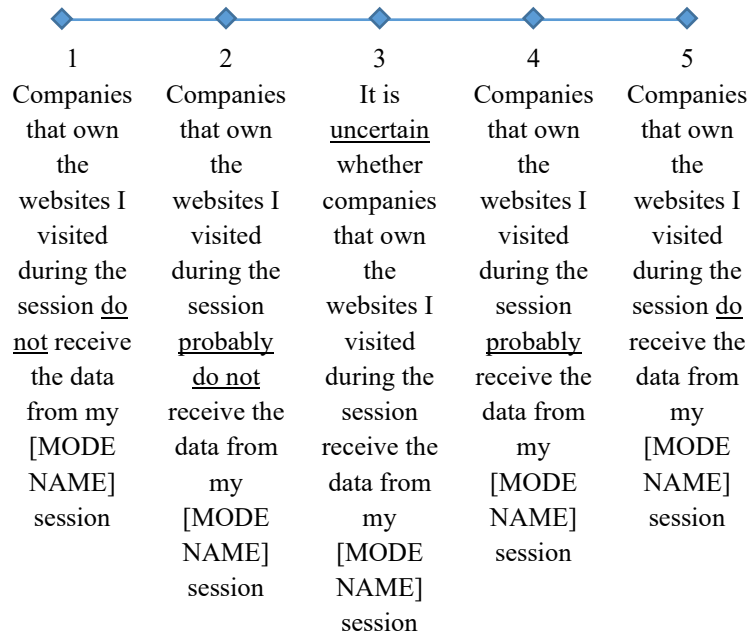
[FOR Q4-Q6, RANDOMIZE ORDER OF FIRST 5 OPTIONS BETWEEN 1-2-3-4-5 OR 5-4-3-2-1, NO STARTING POINT. DO NOT SHOW NUMBERS ON SCALE TO RESPONDENTS. MAINTAIN SAME ORDER OF OPTIONS ACROSS Q4-Q6]

[FOR Q4-Q6, IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

- Q4. While in [MODE NAME] mode, do the companies that own the websites you visited during the session receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?

Please base your answer on the screens you reviewed.

(Select a point on the scale. If you do not have enough information, please select “I don’t feel I have enough information to answer this question”)



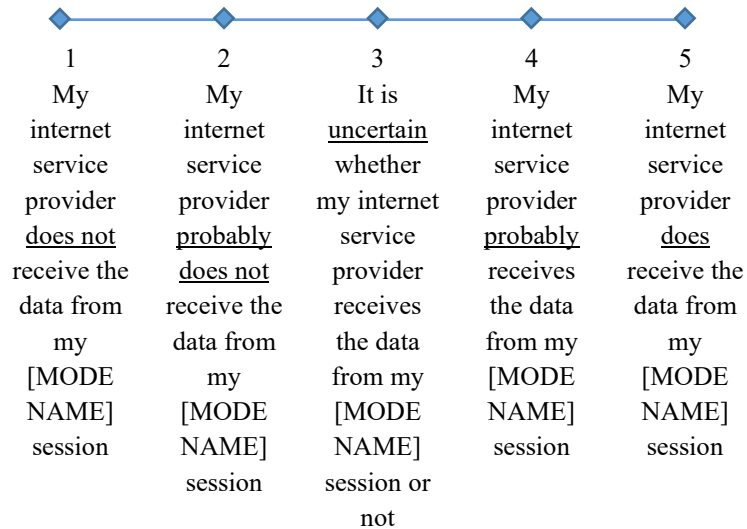
Ⓒ I don’t feel I have enough information to answer this question [EXCLUSIVE]

[NEXT PAGE]

- Q5. While in [MODE NAME] mode, does your internet service provider receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?

Please base your answer on the screens you reviewed.

(Select a point on the scale. If you do not have enough information, please select “I don’t feel I have enough information to answer this question”)



☉ I don’t feel I have enough information to answer this question [EXCLUSIVE]

[NEXT PAGE]

- Q6. While in [MODE NAME] mode, do companies that provide analytics and advertising services to websites you visited during the session receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?

Please base your answer on the screens you reviewed.

(Select a point on the scale. If you do not have enough information, please select “I don’t feel I have enough information to answer this question”)

◆	◆	◆	◆	
1	2	3	4	5
Companies that provide analytics and advertising services to websites I visited during the session <u>do</u> <u>not</u> receive the data from my [MODE NAME] session	Companies that provide analytics and advertising services to websites I visited during the session <u>probably</u> <u>do not</u> receive the data from my [MODE NAME] session	It is <u>uncertain</u> whether companies that provide analytics and advertising services to websites I visited during the session websites I visited during the session receive the data from my [MODE NAME] session or not	Companies that provide analytics and advertising services to websites I visited during the session <u>probably</u> receive the data from my [MODE NAME] session	Companies that provide analytics and advertising services to websites I visited during the session <u>do</u> receive the data from my [MODE NAME] session

⊙ I don’t feel I have enough information to answer this question [EXCLUSIVE]

[NEXT PAGE]

Follow Up Questions

[IN THE BRACKETS IN QF1, DISPLAY “IMAGE” IF RESPONDENT REVIEWED ONE IMAGE AND “IMAGES” IF RESPONDENT REVIEWED MORE THAN ONE IMAGE]

QF1. Were you or were you not able to view the [images / image] clearly to answer the questions asked in this survey? *(Select only one option)*

[RANDOMIZE ORDER; KEEP “DON’T KNOW / UNSURE” LAST]

- ☐ I was able to view the [images / image] clearly to answer the questions asked in this survey
- ☐ I was not able to view the [images / image] clearly to answer the questions asked in this survey
- ☐ Don’t know / Unsure **[ANCHOR LAST]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QF2. Prior to this survey, were you or were you not aware of any lawsuits related to private browsing mode? *(Select only one option)*

[USE THE SAME ORDER OF HAVE/HAVE NOT ANSWERS AS IN QF1]

- ☐ I was aware of at least one lawsuit related to private browsing mode
- ☐ I was not aware of any lawsuit related to private browsing mode **[SKIP TO QF4]**
- ☐ Don’t know / Unsure **[ANCHOR LAST; SKIP TO QF4]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QF3. You indicated that you were aware of at least one lawsuit regarding private browsing mode. Please describe the lawsuit(s) you were aware of: *(Please type in your response. If you do not know the answer or are unsure, please select “Don’t know / Unsure”)*

[OPEN-ENDED TEXT BOX, LIMITING TO 1000 CHARACTERS]

[REQUIRE AT LEAST 4 CHARACTERS; SHOW ERROR “Please be thorough in your response.” IF ENTRY IS LESS THAN 4 CHARACTERS]

- ☐ Don’t know / Unsure **[EXCLUSIVE]**

[IF NO RESPONSE IS PROVIDED, DISPLAY TEXT “PLEASE TYPE A RESPONSE OR SELECT DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QF4. In the past three months, have you or have you not taken any other survey related to private browsing mode? (*Select only one option*)

[USE THE SAME ORDER OF HAVE/HAVE NOT ANSWERS AS IN QF1]

- ☐ I have taken a survey related to private browsing mode
- ☐ I have not taken a survey related to private browsing mode
- ☐ Don't know / Unsure **[ANCHOR LAST]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT "PLEASE SELECT AN ANSWER."]

[GO TO PANEL THANK YOU PAGE]

APPENDIX F.2

INTERPRETATION SURVEY INSTRUMENT

Interpretation Survey Instrument Survey Programmer Instructions

LEGEND:

[PROGRAMMER NOTES IN BOLD CAPS AND BRACKETS]

Notes to respondent in italics

FORMAT: The survey consists of the following sections:

Introduction & Screening (questions labeled QS)
Main Survey Questions (questions labeled Q)
Follow-Up Questions (questions labeled QF)

Overview

[NATIONAL 18+ SAMPLE]

[PANEL MEMBERS SHOULD BE MATCHED TO THE CENSUS ON AGE, GENDER, AND REGION. THAT IS, THE SCREENER SHOULD BE APPLIED TO A SAMPLE REPRESENTATIVE OF THE GENERAL POPULATION IN THE UNITED STATES SO THAT THE FINAL SAMPLE IS REPRESENTATIVE OF THE TARGET POPULATION FOR THE SURVEY (BASED ON ACTUAL QUALIFICATION).]

[TARGET 1000 COMPLETES]

[DISABLE THE BROWSER’S “BACK” BUTTON AND DO NOT SHOW A “BACK” BUTTON WITHIN THE SURVEY]

[FORCE RESPONSES TO ALL QUESTIONS]

[NO SURVEY TITLE AND NO QUESTION NUMBER TO BE DISPLAYED TO RESPONDENTS]

[DIGITAL FINGERPRINTING SHOULD BE USED TO AVOID REPEAT PARTICIPATION. DO NOT INVITE RESPONDENTS WHO WERE INVITED TO TAKE OTHER SURVEYS IN THIS MATTER]

[TEXT FOR TERMINATES: “THANK YOU FOR YOUR INTEREST IN OUR STUDY. WE ARE NO LONGER LOOKING FOR PEOPLE WHO MATCH YOUR CHARACTERISTICS. WE APPRECIATE YOUR TIME.”]

Introduction and Screening

QS0. Please enter the code exactly as it appears in the image below and then click “Continue” to continue.

[INSERT CAPTCHA; TERMINATE IF NOT CORRECT AFTER FOUR TRIES]

**[IF NO RESPONSE IS SELECTED OR CAPTCHA CODE IS INCORRECT, DISPLAY TEXT
“PLEASE ENTER THE CORRECT CODE.”]**

[NEXT PAGE]

QS1. Thank you for participating in our study. Your opinions are very important to us. If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the “Don't know / Unsure” option or the “I don't feel I have enough information to answer this question” option. There are no right or wrong answers.

Your answers will be kept in strict confidence and the results of this study will not be used to try to sell you anything. Trademarks and logos are all the intellectual property of their respective owners.

If you wear glasses or corrective lenses when using a desktop computer, laptop computer, mobile phone, or tablet, please wear them throughout the survey.

Please do not use the “Back” button of your browser while taking the survey. This survey will take less than 15 minutes of your time. When you are ready to get started, please select the “Continue” button.

[NEXT PAGE]

QS2. What is your age? *(Select only one option)*

[ROTATE ORDER, AS IS AND REVERSE; KEEP “PREFER NOT TO ANSWER” LAST]

- ☐ Under 18 **[TERMINATE]**
- ☐ 18 - 29
- ☐ 30 - 39
- ☐ 40 - 49
- ☐ 50 - 59
- ☐ 60 or older
- ☐ Prefer not to answer **[ANCHOR LAST; TERMINATE]**

[TERMINATE IF AGE DOES NOT MATCH THE VALUE PASSED BY PANEL PROVIDER]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS3. Are you...? *(Select only one option)*

[ROTATE ORDER, AS IS AND REVERSE; KEEP “OTHER” AND “PREFER NOT TO ANSWER” LAST]

- ☐ Male
- ☐ Female
- ☐ Other **[ANCHOR SECOND TO LAST]**
- ☐ Prefer not to answer **[ANCHOR LAST; TERMINATE]**

[TERMINATE IF GENDER DOES NOT MATCH THE VALUES PASSED BY PANEL PROVIDER ONLY IF “MALE” OR “FEMALE” IS SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS4. In which state do you live? *(Select only one option)*

[DROP DOWN MENU OF 50 STATES + DISTRICT OF COLUMBIA; HIDDEN VARIABLE FOR REGION; DETERMINE US CENSUS REGION BASED ON STATE SELECTED. ADD “PREFER NOT TO ANSWER” AND “DON’T KNOW / UNSURE” OPTIONS BELOW DROP DOWN MENU]

- ☐ Prefer not to answer **[ANCHOR SECOND TO LAST; TERMINATE]**
- ☐ Don’t know / Unsure **[ANCHOR LAST; TERMINATE]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT EITHER A STATE, PREFER NOT TO ANSWER, OR DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QS5. Have you or any member of your household ever worked for any of the following types of companies? *(Select all that apply)*

[RANDOMIZE LIST; KEEP “NONE OF THE ABOVE” LAST]

- ☐ A technology company or technology consultancy
- ☐ A law firm, legal services organization, or court **[TERMINATE]**
- ☐ A marketing, market research, or advertising agency
- ☐ An academic institution
- ☐ A construction company
- ☐ A clothing retailer
- ☐ A real estate agency
- ☐ A car dealership
- ☐ A fitness center
- ☐ A healthcare provider or medical office
- ☐ None of the above **[ANCHOR LAST; EXCLUSIVE]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT THE RELEVANT COMPANY TYPE(S) OR NONE OF THE ABOVE.”]

[NEXT PAGE]

QS6. This question is to check your attention. Please select “South” from the answer options below.
(*Select only one option*)

[RANDOMIZE ORDER; KEEP “NONE OF THE ABOVE” AND “DON’T KNOW / UNSURE” LAST]

- ☐ North
- ☐ East
- ☐ South
- ☐ West
- ☐ None of the above **[ANCHOR SECOND TO LAST]**
- ☐ Don’t know / Unsure **[ANCHOR LAST]**

[TERMINATE IF “SOUTH” IS NOT SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS7. Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use? (*Select all that apply*)

[RANDOMIZE LIST; KEEP “OTHER” AND “DON’T KNOW / UNSURE” LAST]

- ☐ Internet Explorer
- ☐ Microsoft Edge
- ☐ Safari
- ☐ Brave
- ☐ Google Chrome
- ☐ Mozilla Firefox
- ☐ Opera
- ☐ DuckDuckGo
- ☐ Odeon **[TERMINATE]**
- ☐ Other (*Please specify*) _____ **[ANCHOR SECOND TO LAST]**
- ☐ Don’t know / Unsure **[ANCHOR LAST; EXCLUSIVE]**

[TERMINATE IF ANY COMBINATION OF ANSWER OPTIONS CONTAINING “ODEON” IS SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT EITHER THE INTERNET BROWSER(S) YOU USE OR DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QS8. In the past six months, which of the following features, if any, have you used on your internet browser(s)? (*Select all that apply*)

[RANDOMIZE LIST; KEEP “OTHER” AND “DON’T KNOW / UNSURE” LAST]

- ☐ Private browsing mode
- ☐ Bookmarks
- ☐ Website translator
- ☐ Customized home page
- ☐ Screenshot tool
- ☐ Dark mode for visual display
- ☐ Other (*Please specify*) _____ [ANCHOR SECOND TO LAST]
- ☒ Don’t know / Unsure [ANCHOR LAST; EXCLUSIVE]

[TERMINATE IF “PRIVATE BROWSING MODE” IS NOT SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT THE FEATURES YOU USED ON YOUR INTERNET BROWSER(S) OR SELECT DON’T KNOW / UNSURE.”]

[NEXT PAGE]

Main Questionnaire

[ASSIGN RESPONDENT TO CELLS BASED ON THE FOLLOWING:

FIRST, ASSIGN RESPONDENT TO GROUP:

- RANDOMIZE RESPONDENT TO “SPLASH SCREEN ONLY”, “SPLASH SCREEN WITH POLICIES (HIGHLIGHTED)”, “SPLASH SCREEN WITH NEW ACCOUNT CREATION AGREEMENT”, OR “SPLASH SCREEN WITH CONSENT BUMP AGREEMENT AND FAQ PAGE” GROUP.

SECOND, ASSIGN RESPONDENT TO MOBILE OR DESKTOP VERSION:

- DETECT DEVICE RESPONDENT IS USING.
- IF RESPONDENT IS USING A DESKTOP COMPUTER, LAPTOP COMPUTER, OR TABLET, PRESENT DESKTOP VERSION.
- IF RESPONDENT IS USING A MOBILE DEVICE, PRESENT MOBILE VERSION.

TARGET 250 COMPLETES FOR EACH OF THE GROUPS]

	Number of Completes	Stimuli Description
GROUP A (Splash Screen Only)	250	<ul style="list-style-type: none"> • Incognito Splash Screen • “Learn More” page
GROUP B (Splash Screen with Policies (Highlighted))	250	<ul style="list-style-type: none"> • Google Privacy Policy, March 31, 2020 (with and without highlights) • Chrome Privacy Notice, May 20, 2020 (with and without highlights) • Incognito Splash Screen • “Learn More” page
GROUP C (Splash Screen with New Account Creation Agreement)	250	<ul style="list-style-type: none"> • New Account Creation Agreement • Incognito Splash Screen • “Learn More” page
GROUP D (Splash Screen with Consent Bump Agreement and FAQ Page)	250	<ul style="list-style-type: none"> • Consent Bump Agreement and FAQ page • Incognito Splash Screen • “Learn More” page

Q0. Based on your answers to the previous questions, you have qualified for this survey.

[NEXT PAGE]

Q1. This survey is about private browsing mode. You have been selected to answer questions about Chrome, which is a browser from a company named Google.

Next, you will see images of [STIMULI]. Please consider these images with the intention to use private browsing mode. After, you will be asked to answer a few questions. You will be able to view these images again as you answer the questions.

Please do not use your browser's "Back" button.

If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the "Don't know / Unsure" option or the "I don't feel I have enough information to answer this question" option. There are no right or wrong answers.

[PIPE INTO "STIMULI"]

- "a screen that appears when you enable Chrome's Incognito mode and a page that includes additional information for private browsing" **IF RESPONDENT IS ASSIGNED TO GROUP A,**
- **OR** "[a screen that appears when you enable Chrome's Incognito mode and a page that includes additional information for private browsing], as well as [Google's Privacy Policy] and [the Chrome Privacy Notice]" **IF RESPONDENT IS ASSIGNED TO GROUP B,**
- **OR** "[a screen that appears when you enable Chrome's Incognito mode and a page that includes additional information for private browsing], as well as [Google's terms of service related to saving your web and app activity]" **IF RESPONDENT IS ASSIGNED TO GROUPS C OR D.**

ORDER BRACKETED TEXT FOR GROUPS B, C, OR D BASED ON THE ORDER THAT IMAGES ARE PRESENTED TO RESPONDENTS, WHERE Q8/Q9 CORRESPONDS TO "a screen that appears when you enable Chrome's Incognito mode and a page that includes additional information for private browsing" Q2/Q3 CORRESPONDS TO "Google's Privacy Policy", Q4/Q5 CORRESPONDS TO "the Chrome Privacy Notice", AND Q6 OR Q7 CORRESPONDS TO "Google's terms of service related to saving your web and app activity"]

[NEXT PAGE]

[IF RESPONDENT IS ASSIGNED TO GROUP A, SHOW BLOCK D (Q8-Q9)]

[IF RESPONDENT IS ASSIGNED TO GROUP B, SHOW BLOCK A (Q2-Q5) AND BLOCK D (Q8-Q9)]

[IF RESPONDENT IS ASSIGNED TO GROUP C, SHOW BLOCK B (Q6) AND BLOCK D (Q8-Q9)]

[IF RESPONDENT IS ASSIGNED TO GROUP D, SHOW BLOCK C (Q7) AND BLOCK D (Q8-Q9)]

[RANDOMIZE ORDER OF BLOCKS PRESENTED. WITHIN BLOCK A, RANDOMIZE ORDER OF BLOCK A.1 (Q2-Q3) AND A.2 (Q4-Q5)]

[BLOCK A]

[BLOCK A.1]

Q2. You will now see the Google Privacy Policy. Please carefully read this policy. Within the policy, hyperlinks have been disabled; however, if you click on [TOC], you will be able to navigate to specific policy sections. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

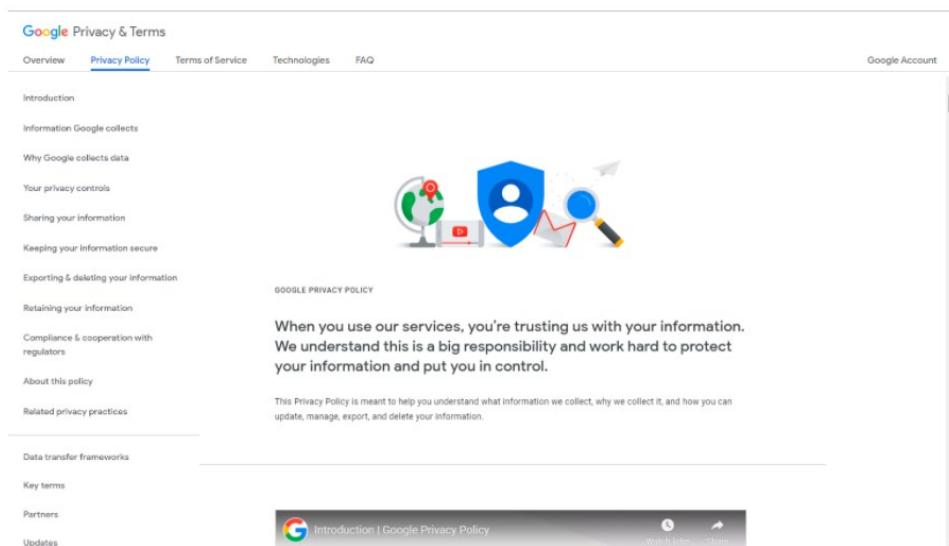
Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[PIPE INTO "TOC" "certain Table of Contents section headings on the left-hand side" IF RESPONDENT IS USING DESKTOP DEVICE OR "the Table of Contents section headings near the top of the page" IF RESPONDENT IS USING MOBILE DEVICE]

[WHEN USER CLICKS ON "CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.", OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY PRIVACY POLICY IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION "(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)" WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE "CONTINUE" BUTTON]



[NEXT PAGE]

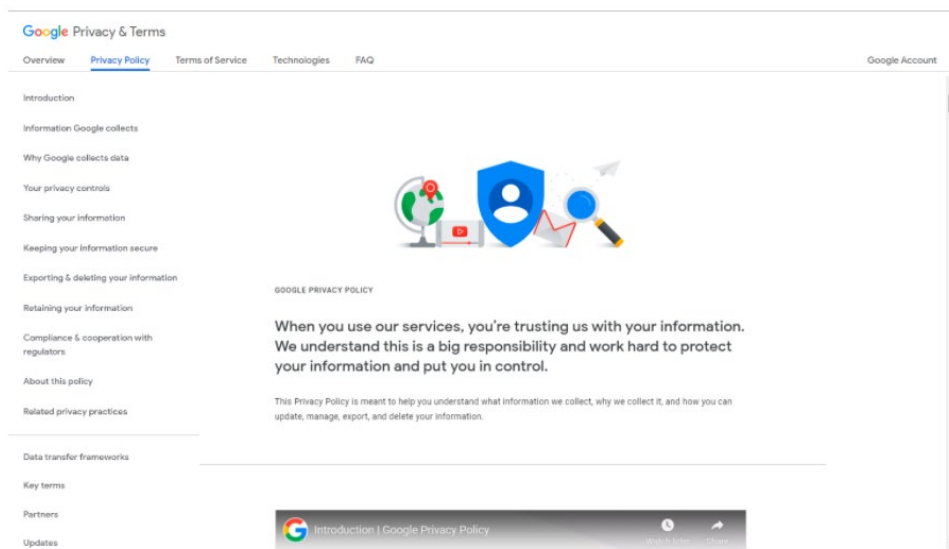
- Q3. Thank you for reviewing the [Google Privacy Policy](#). Before continuing, please take another look at the highlighted sections and make sure you understand them. As you answer questions, you will be able to review the policy again. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY HIGHLIGHTED VERSION OF PRIVACY POLICY IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 15 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 15. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]



[NEXT PAGE]

[BLOCK A.2]

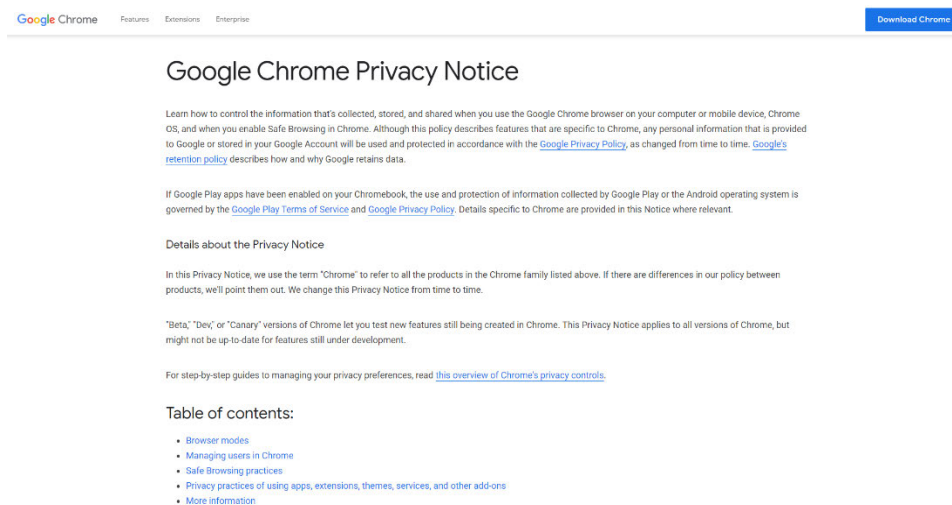
Q4. You will now see the Chrome Privacy Notice. Please read it carefully. Within the policy, hyperlinks have been disabled; however, you can navigate to specific sections of the policy by clicking on the headings under the Table of Contents. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY CHROME PRIVACY NOTICE IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]



[NEXT PAGE]

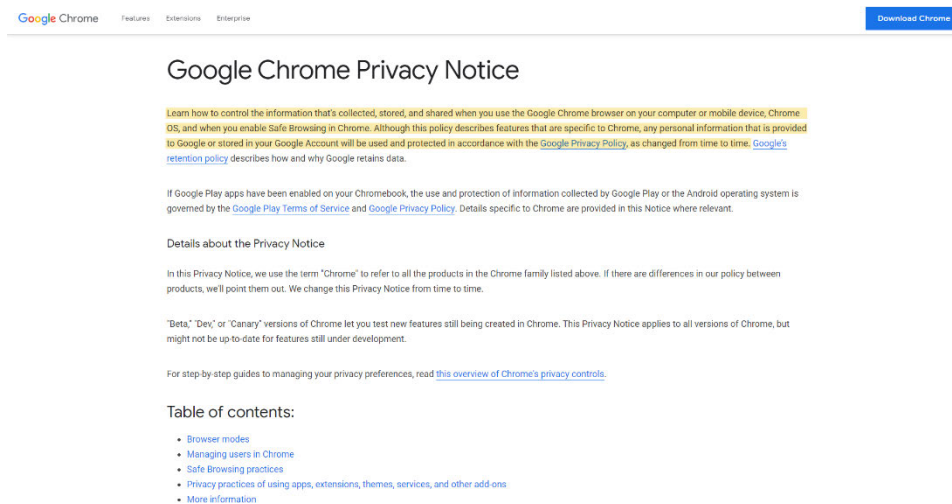
- Q5. Thank you for reviewing the [Chrome Privacy Notice](#). Before continuing, please take another look at the highlighted sections and make sure you understand them. As you answer questions, you will be able to review the notice again. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY HIGHLIGHTED VERSION OF CHROME PRIVACY NOTICE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 15 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 15. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]



[NEXT PAGE]

[BLOCK B]

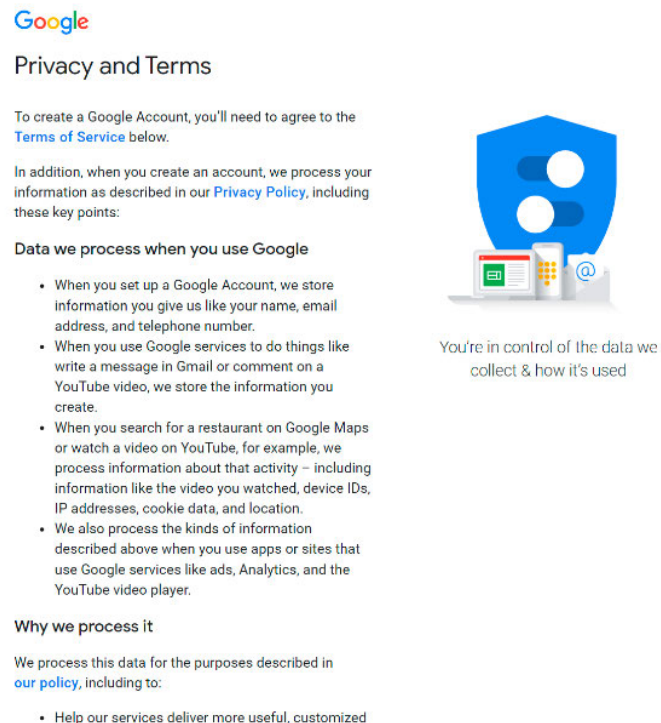
Q6. You will now see the terms of service related to saving your web and app activity. Please carefully read this agreement. Within the agreement, hyperlinks have been disabled. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY NEW ACCOUNT CREATION AGREEMENT IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]



[NEXT PAGE]

[BLOCK C]

- Q7. You will now see the terms of service related to saving your web and app activity. Please carefully read this agreement. Within the agreement, hyperlinks have been disabled. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY CONSENT BUMP AGREEMENT AND FAQ PAGE IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]



Some new features for your Google Account

We've introduced some optional features for your account, giving you more control over the data Google collects and how it's used, while allowing Google to show you more relevant ads.

What changes if you turn on these new features?

1. More information will be available in your *Google Account*, making it easier for you to review and control



When you use Google services like Search and YouTube, you generate data – things like what you've searched for and videos you've watched. You can find and control that data in *My Account* under the **Web & App Activity** setting.

With this change, this setting may also include browsing data from Chrome and activity from sites and apps that partner with Google, including those that show ads from Google.

2. Google will use this information to make ads across the web more relevant for you



[NEXT PAGE]

[BLOCK D]

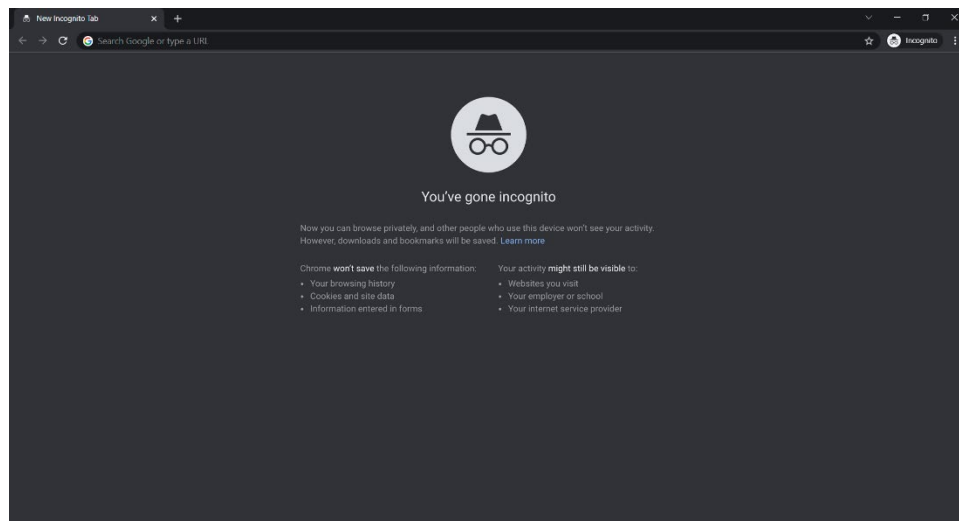
Q8. You will now see the screen that appears when a new Chrome Incognito window is opened. Please read the page carefully. Hyperlinks have been enabled in this image.

Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY INCOGNITO SPLASH SCREEN IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]



[CREATE HYPERLINK TO “LEARN MORE” ON THE IMAGE AND RECORD WHETHER OR NOT RESPONDENT CLICKS ON IT.]

- **IF RESPONDENT CLICKS ON “LEARN MORE” BEFORE THE 30-SECOND TIMER EXPIRES, PRESENT A POP UP WITH THE FOLLOWING MESSAGE, “YOU WILL BE TAKEN TO THE NEXT PAGE IN [X] SECONDS.” WHERE X IS A TIMER THAT MIRRORS THE NUMBER OF SECONDS REMAINING IN THE 30-SECOND TIMER FOR THE PAGE. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP. TAKE RESPONDENT TO Q9 WHEN THE TIMER EXPIRES.**
- **IF RESPONDENT CLICKS ON “LEARN MORE” AFTER THE 30-SECOND TIMER EXPIRES, TAKE RESPONDENT TO Q9.**

CLICKING THE “CONTINUE” BUTTON AFTER THE TIMER EXPIRES WILL ALSO TAKE RESPONDENT TO Q9]

[NEXT PAGE]

Q9. You will now see the following screen that would appear if you clicked “Learn more” on the previous page. Hyperlinks and any other clickable elements in this image have been disabled.

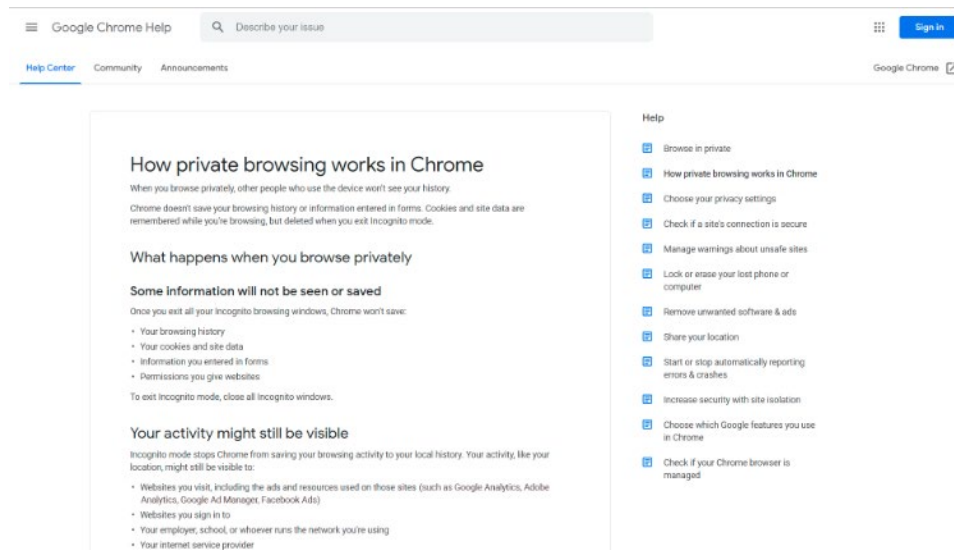
Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY “LEARN MORE” PAGE IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]

[PROGRAM THE “LEARN MORE” PAGE IMAGE TO BE SCROLLABLE WITHIN THE BROWSER WINDOW FRAME]



[NEXT PAGE]

[RANDOMIZE ORDER OF PRESENTING Q10-Q12]

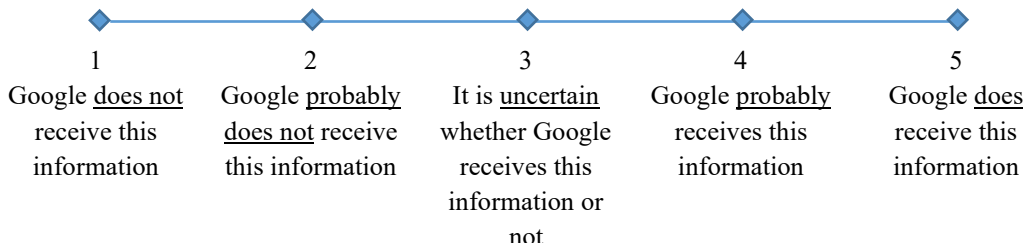
[PRESENT ALL IMAGES THAT THE RESPONDENT REVIEWED AS THUMBNAIL IMAGES AT THE BOTTOM OF THE PAGE FOR Q10-Q12]

[AT THE TOP OF EACH PAGE FOR Q10-Q12, DISPLAY THE FOLLOWING TEXT “(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)”]

[FOR Q10-Q12, RANDOMIZE ORDER OF FIRST 5 OPTIONS BETWEEN 1-2-3-4-5 OR 5-4-3-2-1, NO STARTING POINT. DO NOT SHOW NUMBERS ON SCALE TO RESPONDENTS. MAINTAIN SAME ORDER OF OPTIONS ACROSS Q10-Q12]

[FOR Q10-Q12, IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

- Q10. Based on the screens that you reviewed, please select one of the following regarding URLs of the sites you visit during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):
(Select a point on the scale. If you do not have enough information, please select “I don’t feel I have enough information to answer this question”)

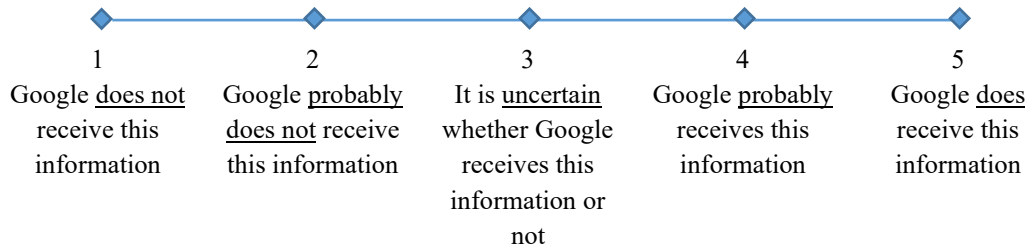


⊙ I don’t feel I have enough information to answer this question [EXCLUSIVE]

[IF RESPONDENT HOVERS OVER “URLS OF THE SITES YOU VISIT” IN THE QUESTION, DISPLAY THE FOLLOWING TEXT, “The web addresses of the webpages you visited using the browser.”]

[NEXT PAGE]

- Q11. Based on the screens that you reviewed, please select one of the following regarding IP address during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):
(Select a point on the scale. If you do not have enough information, please select “I don’t feel I have enough information to answer this question”)

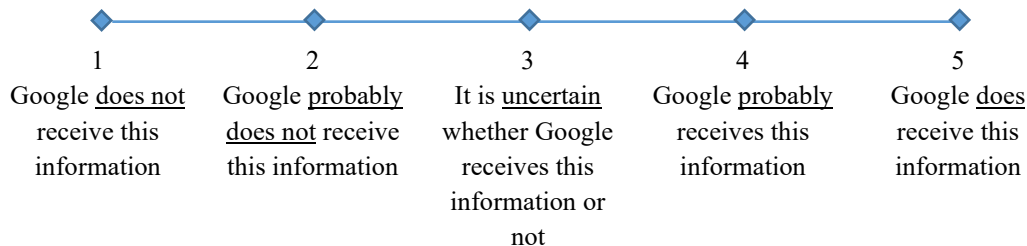


Ⓐ I don’t feel I have enough information to answer this question [EXCLUSIVE]

[IF RESPONDENT HOVERS OVER “IP ADDRESS” IN THE QUESTION, DISPLAY THE FOLLOWING TEXT, “Every device connected to the Internet is assigned a number known as an Internet protocol (IP) address. An IP address can often be used to identify the location from which a device is connecting to the Internet.”]

[NEXT PAGE]

- Q12. Based on the screens that you reviewed, please select one of the following regarding cookies placed on your browser during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):
(Select a point on the scale. If you do not have enough information, please select “I don’t feel I have enough information to answer this question”)



Ⓐ I don’t feel I have enough information to answer this question [EXCLUSIVE]

[IF RESPONDENT HOVERS OVER “COOKIES” IN THE QUESTION, DISPLAY THE FOLLOWING TEXT, “A small file containing a string of characters that is sent to your computer when you visit a website. When you visit the site again, the cookie allows that site to recognize your browser. Cookies may store user preferences and other information.”]

[NEXT PAGE]

Follow Up Questions

QF1. Were you or were you not able to view the images clearly to answer the questions asked in this survey? *(Select only one option)*

[RANDOMIZE ORDER; KEEP “DON’T KNOW / UNSURE” LAST]

- ☐ I was able to view the images clearly to answer the questions asked in this survey
- ☐ I was not able to view the images clearly to answer the questions asked in this survey
- ☐ Don’t know / Unsure [ANCHOR LAST]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QF2. Prior to this survey, were you or were you not aware of any lawsuits related to private browsing mode? *(Select only one option)*

[USE THE SAME ORDER OF HAVE/HAVE NOT ANSWERS AS IN QF1]

- ☐ I was aware of at least one lawsuit related to private browsing mode
- ☐ I was not aware of any lawsuit related to private browsing mode [SKIP TO QF4]
- ☐ Don’t know / Unsure [ANCHOR LAST; SKIP TO QF4]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QF3. You indicated that you were aware of at least one lawsuit regarding private browsing mode. Please describe the lawsuit(s) you were aware of: *(Please type in your response. If you do not know the answer or are unsure, please select “Don’t know / Unsure”)*

[OPEN-ENDED TEXT BOX, LIMITING TO 1000 CHARACTERS]

[REQUIRE AT LEAST 4 CHARACTERS; SHOW ERROR “Please be thorough in your response.”
IF ENTRY IS LESS THAN 4 CHARACTERS]

- ☐ Don’t know / Unsure [EXCLUSIVE]

[IF NO RESPONSE IS PROVIDED, DISPLAY TEXT “PLEASE TYPE A RESPONSE OR
SELECT DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QF4. In the past three months, have you or have you not taken any other survey related to private browsing mode? (*Select only one option*)

[USE THE SAME ORDER OF HAVE/HAVE NOT ANSWERS AS IN QF1]

- ☐ I have taken a survey related to private browsing mode
- ☐ I have not taken a survey related to private browsing mode
- ☐ Don't know / Unsure **[ANCHOR LAST]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT "PLEASE SELECT AN ANSWER."]

[GO TO PANEL THANK YOU PAGE]

APPENDIX F.3

LIKELIHOOD OF USE

SURVEY INSTRUMENT

**Likelihood of Use Experimental Survey Instrument
Survey Programmer Instructions**

LEGEND:

[PROGRAMMER NOTES IN BOLD CAPS AND BRACKETS]

Notes to respondent in italics

FORMAT: The survey consists of the following sections:

Introduction & Screening (questions labeled QS)
Main Survey Questions (questions labeled Q)
Follow-Up Questions (questions labeled QF)

Overview

[NATIONAL 18+ SAMPLE]

[PANEL MEMBERS SHOULD BE MATCHED TO THE CENSUS ON AGE, GENDER, AND REGION. THAT IS, THE SCREENER SHOULD BE APPLIED TO A SAMPLE REPRESENTATIVE OF THE GENERAL POPULATION IN THE UNITED STATES SO THAT THE FINAL SAMPLE IS REPRESENTATIVE OF THE TARGET POPULATION FOR THE SURVEY (BASED ON ACTUAL QUALIFICATION).]

[TARGET 1000 COMPLETES]

[DISABLE THE BROWSER’S “BACK” BUTTON AND DO NOT SHOW A “BACK” BUTTON WITHIN THE SURVEY]

[FORCE RESPONSES TO ALL QUESTIONS]

[NO SURVEY TITLE AND NO QUESTION NUMBER TO BE DISPLAYED TO RESPONDENTS]

[DIGITAL FINGERPRINTING SHOULD BE USED TO AVOID REPEAT PARTICIPATION. DO NOT INVITE RESPONDENTS WHO WERE INVITED TO TAKE OTHER SURVEYS IN THIS MATTER]

[TEXT FOR TERMINATES: “THANK YOU FOR YOUR INTEREST IN OUR STUDY. WE ARE NO LONGER LOOKING FOR PEOPLE WHO MATCH YOUR CHARACTERISTICS. WE APPRECIATE YOUR TIME.”]

Introduction and Screening

QS0. Please enter the code exactly as it appears in the image below and then click “Continue” to continue.

[INSERT CAPTCHA; TERMINATE IF NOT CORRECT AFTER FOUR TRIES]

**[IF NO RESPONSE IS SELECTED OR CAPTCHA CODE IS INCORRECT, DISPLAY TEXT
“PLEASE ENTER THE CORRECT CODE.”]**

[NEXT PAGE]

QS1. Thank you for participating in our study. Your opinions are very important to us. If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the “Don't know / Unsure” option or the “I don't feel I have enough information to answer this question” option. There are no right or wrong answers.

Your answers will be kept in strict confidence and the results of this study will not be used to try to sell you anything. Trademarks and logos are all the intellectual property of their respective owners.

If you wear glasses or corrective lenses when using a desktop computer, laptop computer, mobile phone, or tablet, please wear them throughout the survey.

Please do not use the “Back” button of your browser while taking the survey. This survey will take less than 15 minutes of your time. When you are ready to get started, please select the “Continue” button.

[NEXT PAGE]

QS2. What is your age? *(Select only one option)*

[ROTATE ORDER, AS IS AND REVERSE; KEEP “PREFER NOT TO ANSWER” LAST]

- ☐ Under 18 **[TERMINATE]**
- ☐ 18 - 29
- ☐ 30 - 39
- ☐ 40 - 49
- ☐ 50 - 59
- ☐ 60 or older
- ☐ Prefer not to answer **[ANCHOR LAST; TERMINATE]**

[TERMINATE IF AGE DOES NOT MATCH THE VALUE PASSED BY PANEL PROVIDER]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS3. Are you...? *(Select only one option)*

[ROTATE ORDER, AS IS AND REVERSE; KEEP “OTHER” AND “PREFER NOT TO ANSWER” LAST]

- ☐ Male
- ☐ Female
- ☐ Other **[ANCHOR SECOND TO LAST]**
- ☐ Prefer not to answer **[ANCHOR LAST; TERMINATE]**

[TERMINATE IF GENDER DOES NOT MATCH THE VALUES PASSED BY PANEL PROVIDER ONLY IF “MALE” OR “FEMALE” IS SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS4. In which state do you live? *(Select only one option)*

[DROP DOWN MENU OF 50 STATES + DISTRICT OF COLUMBIA; HIDDEN VARIABLE FOR REGION; DETERMINE US CENSUS REGION BASED ON STATE SELECTED. ADD “PREFER NOT TO ANSWER” AND “DON’T KNOW / UNSURE” OPTIONS BELOW DROP DOWN MENU]

- ☐ Prefer not to answer **[ANCHOR SECOND TO LAST; TERMINATE]**
- ☐ Don’t know / Unsure **[ANCHOR LAST; TERMINATE]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT EITHER A STATE, PREFER NOT TO ANSWER, OR DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QS5. Have you or any member of your household ever worked for any of the following types of companies? *(Select all that apply)*

[RANDOMIZE LIST; KEEP “NONE OF THE ABOVE” LAST]

- ☐ A technology company or technology consultancy
- ☐ A law firm, legal services organization, or court **[TERMINATE]**
- ☐ A marketing, market research, or advertising agency
- ☐ An academic institution
- ☐ A construction company
- ☐ A clothing retailer
- ☐ A real estate agency
- ☐ A car dealership
- ☐ A fitness center
- ☐ A healthcare provider or medical office
- ☐ None of the above **[ANCHOR LAST; EXCLUSIVE]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT THE RELEVANT COMPANY TYPE(S) OR NONE OF THE ABOVE.”]

[NEXT PAGE]

QS6. This question is to check your attention. Please select “South” from the answer options below.
(*Select only one option*)

[RANDOMIZE ORDER; KEEP “NONE OF THE ABOVE” AND “DON’T KNOW / UNSURE” LAST]

- ☐ North
- ☐ East
- ☐ South
- ☐ West
- ☐ None of the above **[ANCHOR SECOND TO LAST]**
- ☐ Don’t know / Unsure **[ANCHOR LAST]**

[TERMINATE IF “SOUTH” IS NOT SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QS7. Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use? (*Select all that apply*)

[RANDOMIZE LIST; KEEP “OTHER” AND “DON’T KNOW / UNSURE” LAST]

- ☐ Internet Explorer
- ☐ Microsoft Edge
- ☐ Safari
- ☐ Brave
- ☐ Google Chrome
- ☐ Mozilla Firefox
- ☐ Opera
- ☐ DuckDuckGo
- ☐ Odeon **[TERMINATE]**
- ☐ Other (*Please specify*) _____ **[ANCHOR SECOND TO LAST]**
- ☐ Don’t know / Unsure **[ANCHOR LAST; EXCLUSIVE]**

[TERMINATE IF ANY COMBINATION OF ANSWER OPTIONS CONTAINING “ODEON” IS SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT EITHER THE INTERNET BROWSER(S) YOU USE OR DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QS8. In the past six months, which of the following features, if any, have you used on your internet browser(s)? (*Select all that apply*)

[RANDOMIZE LIST; KEEP “OTHER” AND “DON’T KNOW / UNSURE” LAST]

- ☐ Private browsing mode
- ☐ Bookmarks
- ☐ Website translator
- ☐ Customized home page
- ☐ Screenshot tool
- ☐ Dark mode for visual display
- ☐ Other (*Please specify*) _____ [ANCHOR SECOND TO LAST]
- ☒ Don’t know / Unsure [ANCHOR LAST; EXCLUSIVE]

[TERMINATE IF “PRIVATE BROWSING MODE” IS NOT SELECTED]

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT THE FEATURES YOU USED ON YOUR INTERNET BROWSER(S) OR SELECT DON’T KNOW / UNSURE.”]

[NEXT PAGE]

Main Questionnaire

[ASSIGN RESPONDENT TO CELLS BASED ON THE FOLLOWING:

FIRST, ASSIGN RESPONDENT TO LANGUAGE GROUP:

- RANDOMIZE RESPONDENT TO “ACTUAL LANGUAGE” OR “ALTERNATIVE LANGUAGE” GROUP.

SECOND, ASSIGN RESPONDENT TO MOBILE OR DESKTOP VERSION:

- DETECT DEVICE RESPONDENT IS USING.
- IF RESPONDENT IS USING A DESKTOP COMPUTER, LAPTOP COMPUTER, OR TABLET, PRESENT DESKTOP VERSION.
- IF RESPONDENT IS USING A MOBILE DEVICE, PRESENT MOBILE VERSION.

TARGET 500 COMPLETES FOR EACH OF THE “ACTUAL LANGUAGE” AND “ALTERNATIVE LANGUAGE” GROUPS]

Mobile or Desktop Version	GROUP	
	Actual Language 500 completes	Alternative Language 500 completes
Desktop	<i>Actual language</i>	<i>Alternative language</i>
Mobile		

Q0. Based on your answers to the previous questions, you have qualified for this survey.

[NEXT PAGE]

Q1. You will first be presented with a scenario. Next, you will see an image. After, you will be asked to answer a few questions. You will be able to view any images again as you answer the questions.

Please do not use your browser’s “Back” button.

If you don’t know an answer to a question or if you don’t have an opinion, please don’t guess. Simply indicate this in your response by selecting the “Don’t know / Unsure” option or the “I don’t feel I have enough information to answer this question” option. There are no right or wrong answers.

[NEXT PAGE]

- Q2. Imagine that you are researching online about a sensitive topic. You decide to browse the web in private browsing mode.

On the next page, you will see an image of the Chrome browser in Incognito mode.

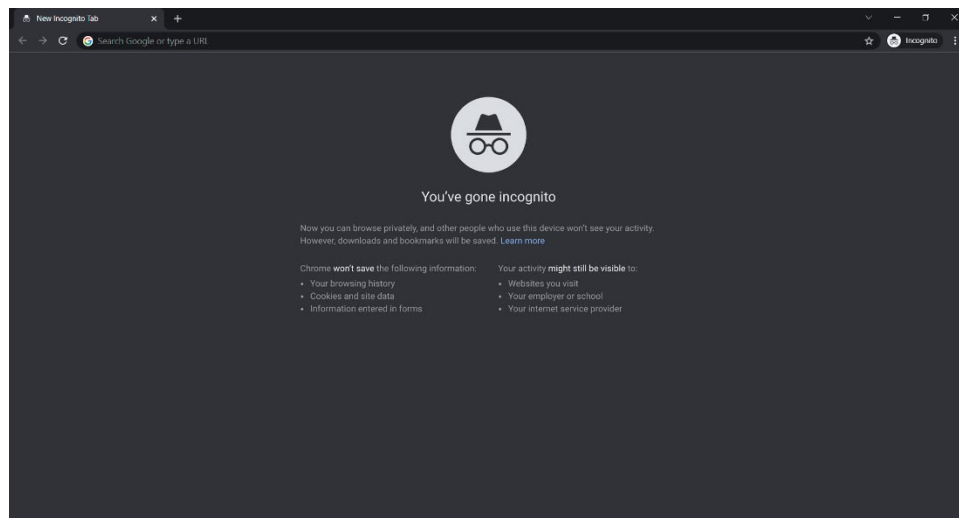
[NEXT PAGE]

- Q3. Please review the page below. Hyperlinks have been enabled in this image.
Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY INCOGNITO SPLASH SCREEN IMAGE]

[RESPONDENT MUST VIEW IMAGE FOR AT LEAST 30 SECONDS BEFORE NAVIGATING TO THE NEXT IMAGE. DISPLAY THE INSTRUCTION “(YOU WILL BE ALLOWED TO PROCEED TO THE NEXT SCREEN IN [X] SECONDS.)” WHERE X IS A TIMER COUNTING DOWN FROM 30. WHEN X=0, REMOVE THIS INSTRUCTION AND SHOW THE “CONTINUE” BUTTON]



[CREATE HYPERLINK TO “LEARN MORE” ON THE IMAGE AND RECORD WHETHER OR NOT RESPONDENT CLICKS ON IT.]

- **IF RESPONDENT CLICKS ON “LEARN MORE” BEFORE THE 30-SECOND TIMER EXPIRES, PRESENT A POP UP WITH THE FOLLOWING MESSAGE, “YOU WILL BE TAKEN TO THE NEXT PAGE IN [X] SECONDS.” WHERE X IS A TIMER THAT MIRRORS THE NUMBER OF SECONDS REMAINING IN THE 30-SECOND TIMER FOR THE PAGE. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP. TAKE RESPONDENT TO Q4 WHEN THE TIMER EXPIRES.**

- IF RESPONDENT CLICKS ON “LEARN MORE” AFTER THE 30-SECOND TIMER EXPIRES, TAKE RESPONDENT TO Q4.

IF RESPONDENT DOES NOT CLICK ON HYPERLINK, GO TO Q5 WHEN THEY CLICK ON THE “CONTINUE” BUTTON]

[NEXT PAGE]

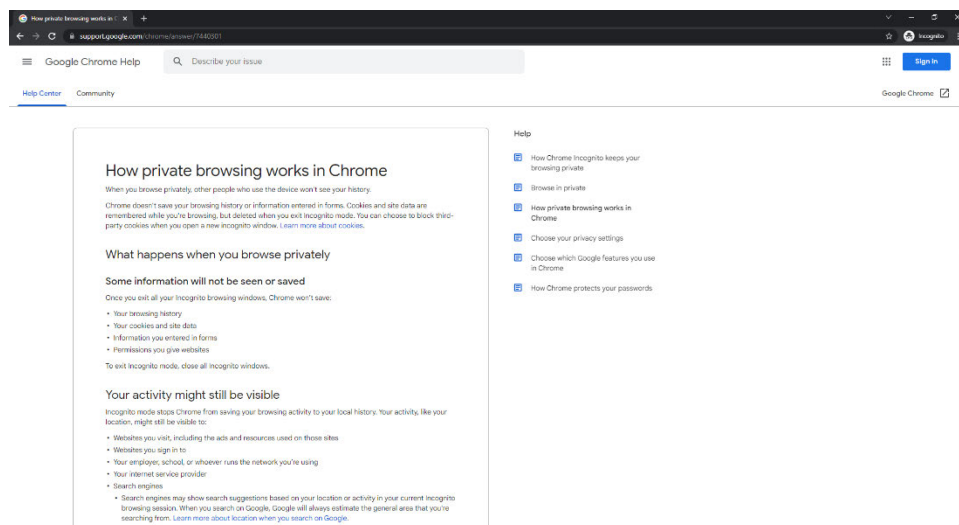
Q4. You see the following screen after clicking “Learn more” on the previous page. Hyperlinks and any other clickable elements in this image have been disabled.

Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.

[WHEN USER CLICKS ON “CLICK HERE TO ZOOM IN ON THE IMAGE. IF YOU CLICK TO ZOOM IN, PLEASE DRAG THE IMAGE TO SCROLL.”, OPEN A POP UP OF THE IMAGE THAT ALLOWS RESPONDENT TO ZOOM IN. ALLOW RESPONDENT THE OPTION TO CLOSE THE POP UP]

[DISPLAY “LEARN MORE” PAGE IMAGE]

[PROGRAM THE “LEARN MORE” PAGE IMAGE TO BE SCROLLABLE WITHIN THE BROWSER WINDOW FRAME]



[NEXT PAGE]

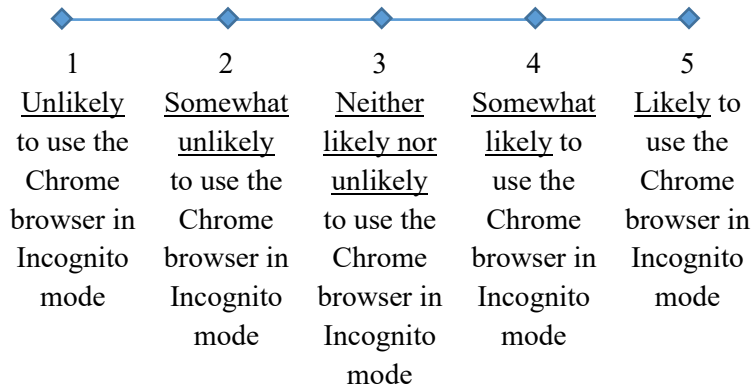
[PRESENT ALL IMAGES THAT THE RESPONDENT REVIEWED AS THUMBNAIL IMAGES AT THE BOTTOM OF THE PAGE FOR Q5]

[AT THE TOP OF EACH PAGE FOR Q5, DISPLAY THE FOLLOWING TEXT IF RESPONDENTS VIEWED ONLY ONE IMAGE: “(The thumbnail contains the image that you have viewed earlier. You can click on the thumbnail to see the enlarged version of this image.)”. DISPLAY

THE FOLLOWING TEXT IF RESPONDENTS VIEWED MORE THAN ONE IMAGE: “(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)”]

- Q5. How likely or unlikely are you to use the Chrome browser in Incognito mode for your online research about the sensitive topic mentioned in the previous scenario?
(Select a point on the scale. If you do not have enough information, please select “I don’t feel I have enough information to answer this question.”)

[RANDOMIZE ORDER OF FIRST 5 OPTIONS BETWEEN 1-2-3-4-5 OR 5-4-3-2-1, NO STARTING POINT. DO NOT SHOW NUMBERS ON SCALE TO RESPONDENTS]



☉ I don’t feel I have enough information to answer this question **[EXCLUSIVE]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

Follow Up Questions

[IN THE BRACKETS IN QF1, DISPLAY “IMAGE” IF RESPONDENT REVIEWED ONE IMAGE AND “IMAGES” IF RESPONDENT REVIEWED MORE THAN ONE IMAGE]

QF1. Were you or were you not able to view the [image / images] clearly to answer the questions asked in this survey? *(Select only one option)*

[RANDOMIZE ORDER; KEEP “DON’T KNOW / UNSURE” LAST]

- ☐ I was able to view the [image / images] clearly to answer the questions asked in this survey
- ☐ I was not able to view the [image / images] clearly to answer the questions asked in this survey
- ☐ Don’t know / Unsure **[ANCHOR LAST]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QF2. Prior to this survey, were you or were you not aware of any lawsuits related to private browsing mode? *(Select only one option)*

[USE THE SAME ORDER OF HAVE/HAVE NOT ANSWERS AS IN QF1]

- ☐ I was aware of at least one lawsuit related to private browsing mode
- ☐ I was not aware of any lawsuit related to private browsing mode **[SKIP TO QF4]**
- ☐ Don’t know / Unsure **[ANCHOR LAST; SKIP TO QF4]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT “PLEASE SELECT AN ANSWER.”]

[NEXT PAGE]

QF3. You indicated that you were aware of at least one lawsuit regarding private browsing mode. Please describe the lawsuit(s) you were aware of: *(Please type in your response. If you do not know the answer or are unsure, please select “Don’t know / Unsure”)*

[OPEN-ENDED TEXT BOX, LIMITING TO 1000 CHARACTERS]

[REQUIRE AT LEAST 4 CHARACTERS; SHOW ERROR “Please be thorough in your response.” IF ENTRY IS LESS THAN 4 CHARACTERS]

- ☐ Don’t know / Unsure **[EXCLUSIVE]**

[IF NO RESPONSE IS PROVIDED, DISPLAY TEXT “PLEASE TYPE A RESPONSE OR SELECT DON’T KNOW / UNSURE.”]

[NEXT PAGE]

QF4. In the past three months, have you or have you not taken any other survey related to private browsing mode? (*Select only one option*)

[USE THE SAME ORDER OF HAVE/HAVE NOT ANSWERS AS IN QF1]

- ☐ I have taken a survey related to private browsing mode
- ☐ I have not taken a survey related to private browsing mode
- ☐ Don't know / Unsure **[ANCHOR LAST]**

[IF NO RESPONSE IS SELECTED, DISPLAY TEXT "PLEASE SELECT AN ANSWER."]

[GO TO PANEL THANK YOU PAGE]

APPENDIX G.1

**CONSUMER PERCEPTIONS
AND EXPECTATIONS
SURVEY SCREENSHOTS
(CHROME GROUP)**

0%

Please enter the code exactly as it appears in the image below and then click "Continue" to continue.

XMIJF3

Continue

4%

Thank you for participating in our study. Your opinions are very important to us. If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the "Don't know / Unsure" option or the "I don't feel I have enough information to answer this question" option. There are no right or wrong answers.

Your answers will be kept in strict confidence and the results of this study will not be used to try to sell you anything. Trademarks and logos are all the intellectual property of their respective owners.

If you wear glasses or corrective lenses when using a desktop computer, laptop computer, mobile phone, or tablet, please wear them throughout the survey.

Please do not use the "Back" button of your browser while taking the survey. This survey will take less than 15 minutes of your time. When you are ready to get started, please select the "Continue" button.

Continue

8%

What is your age?

(Select only one option)

☐ 60 or older

☐ 50 - 59

☐ 40 - 49

☐ 30 - 39

☐ 18 - 29

☐ Under 18

☐ Prefer not to answer

Continue

12%

Are you...?

(Select only one option)

☐ Female

☐ Male

☐ Other

☐ Prefer not to answer

Continue

16%

In which state do you live?

(Select only one option)

Select one... ▾

☐ Prefer not to answer

☐ Don't know / Unsure

Continue

25%

Have you or any member of your household ever worked for any of the following types of companies?
(Select all that apply)

☐ A clothing retailer

☐ A construction company

☐ A marketing, market research, or advertising agency

☐ A law firm, legal services organization, or court

☐ A car dealership

☐ A fitness center

☐ A real estate agency

☐ An academic institution

☐ A healthcare provider or medical office

☐ A technology company or technology consultancy

☐ None of the above

Continue

33%

This question is to check your attention. Please select "South" from the answer options below.
(Select only one option)

☐ North

☐ East

☐ South

☐ West

☐ None of the above

☐ Don't know / Unsure

Continue

37%

Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use?
(Select all that apply)

☐ Mozilla Firefox

☐ Opera

☐ Safari

☐ Brave

☐ DuckDuckGo

☐ Microsoft Edge

☐ Internet Explorer

☐ Odeon

☐ Google Chrome

☐ Other (Please specify)

☐ Don't know / Unsure

Continue

46%

In the past six months, which of the following features, if any, have you used on your internet browser(s)?
(Select all that apply)

☐ Customized home page

☐ Bookmarks

☐ Screenshot tool

☐ Dark mode for visual display

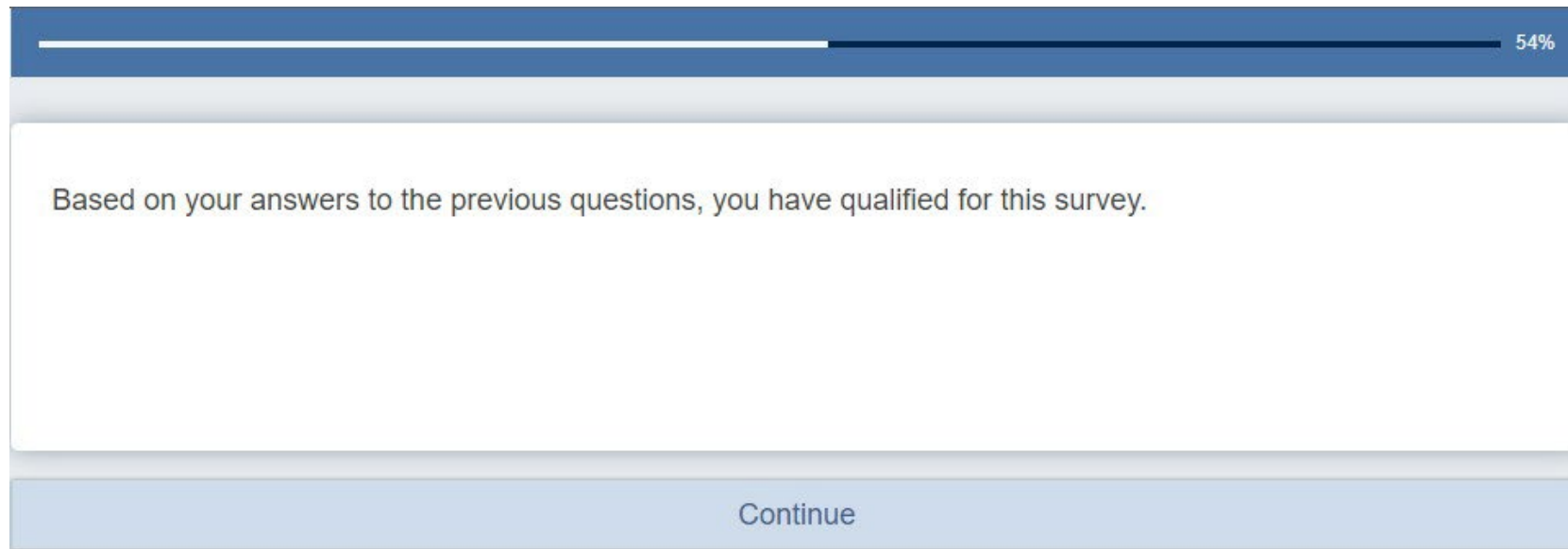
☐ Private browsing mode

☐ Website translator

☐ Other (Please specify)

☐ Don't know / Unsure

Continue



A survey progress bar at the top shows 54% completion. Below it, a white box contains the text: "Based on your answers to the previous questions, you have qualified for this survey." At the bottom is a blue "Continue" button.

54%

Based on your answers to the previous questions, you have qualified for this survey.

Continue

72%

This survey is about what you expect while in private browsing mode. You will first see two images. After, you will be asked to answer a few questions. You will be able to view these images again as you answer the questions.

Please do not use your browser's "Back" button.

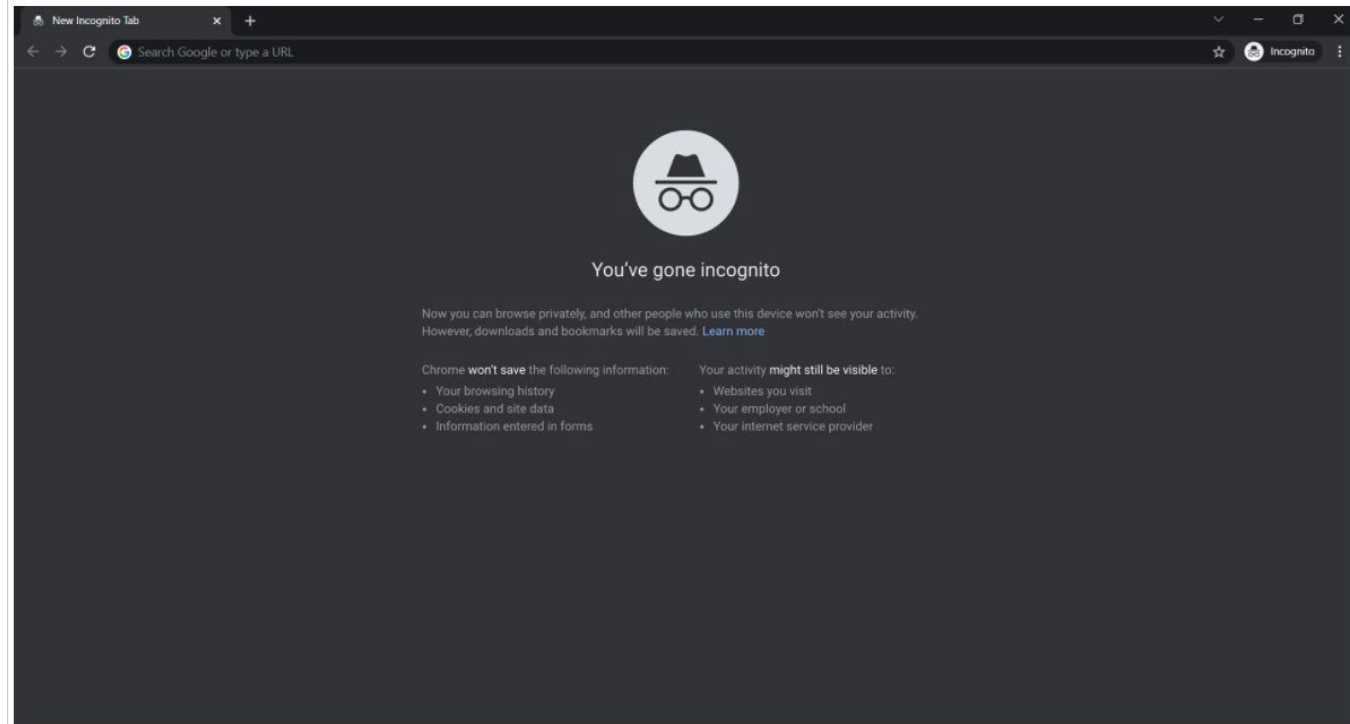
If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the "Don't know / Unsure" option or the "I don't feel I have enough information to answer this question" option. There are no right or wrong answers.

Continue

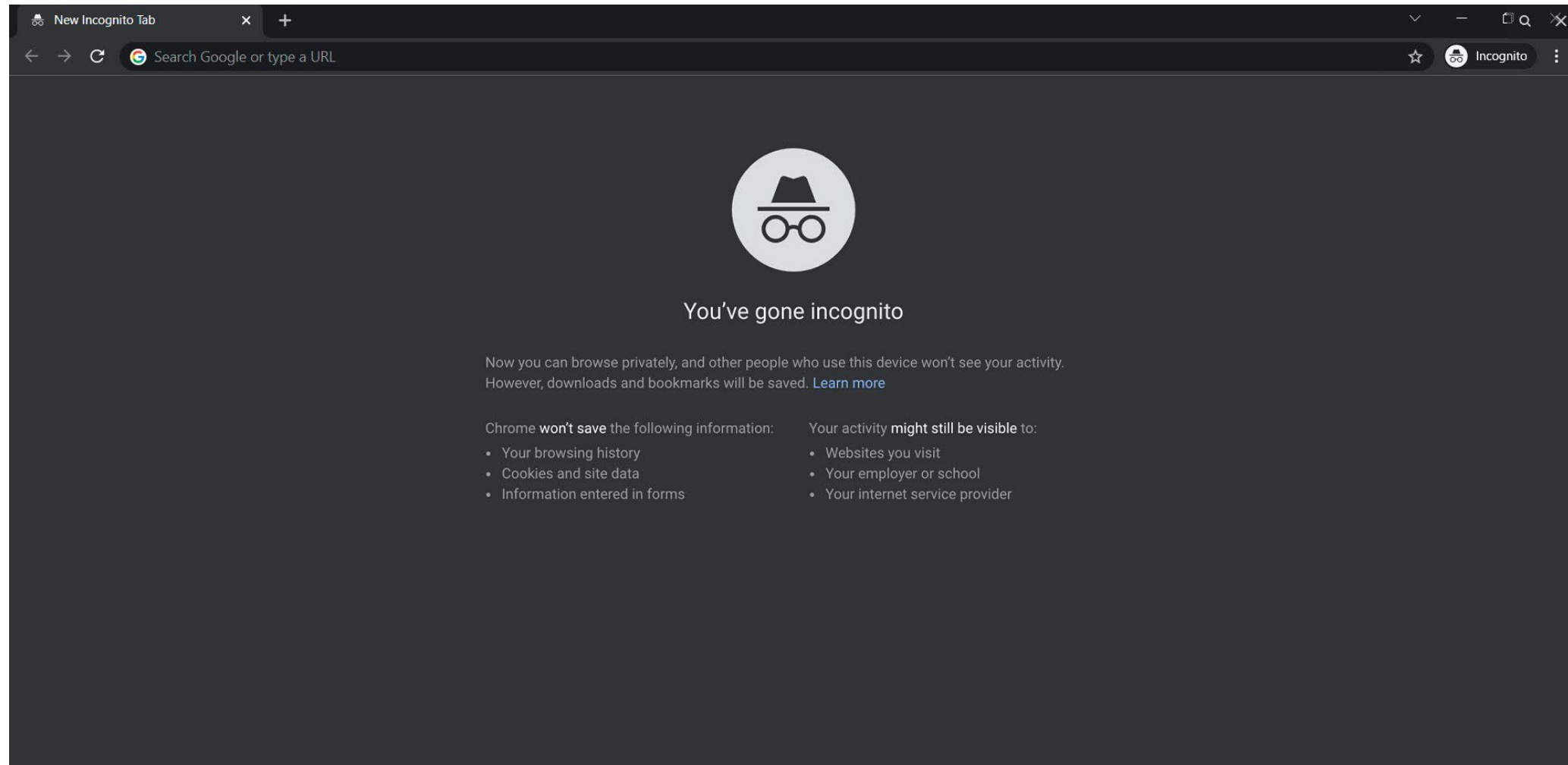
Imagine that you decide to open an Incognito window and see the screen below. Hyperlinks have been enabled in this image.

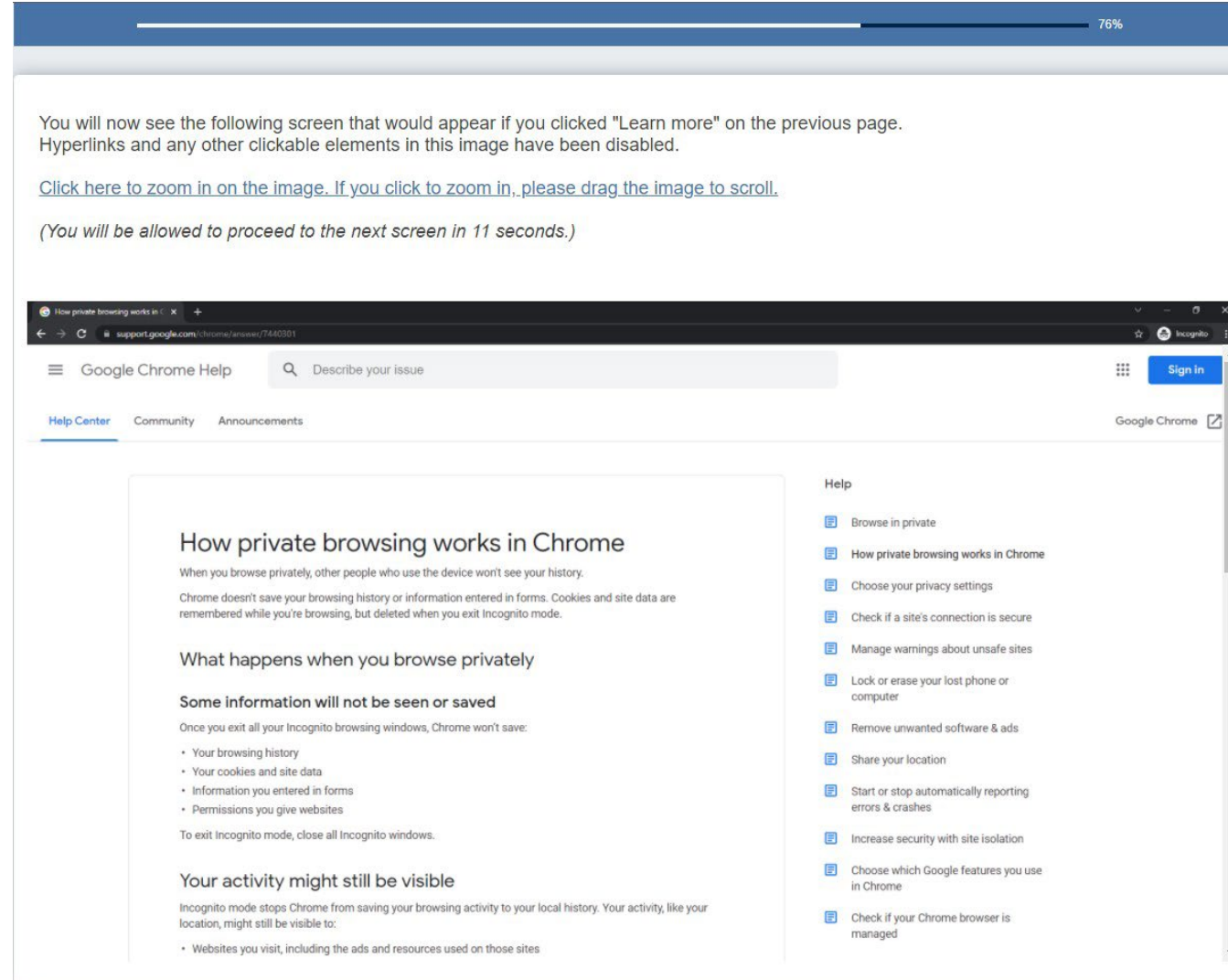
[Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.](#)

(You will be allowed to proceed to the next screen in 23 seconds.)

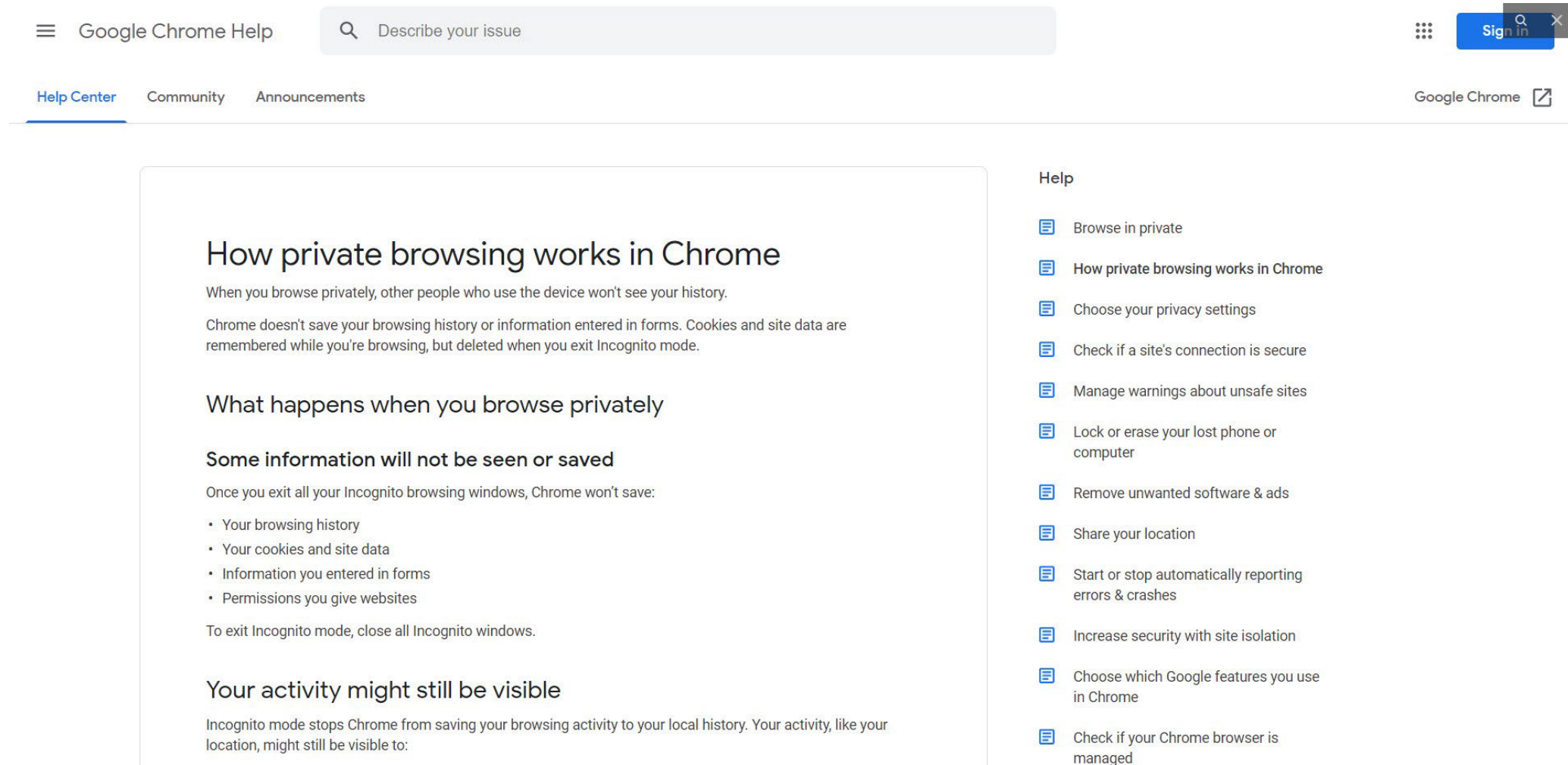


The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.





The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.



76%

(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)

While in Incognito mode, do the companies that own the websites you visited during the session receive or not receive the data from your Incognito session (such as IP address, URLs of the sites you visit, and cookies)?

Please base your answer on the screens you reviewed.

(Select a point on the scale. If you do not have enough information, please select "I don't feel I have enough information to answer this question")

Companies that own the websites I visited during the session do receive the data from my Incognito session

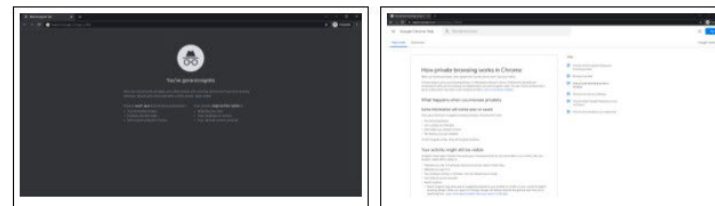
Companies that own the websites I visited during the session probably receive the data from my Incognito session

It is uncertain whether companies that own the websites I visited during the session receive the data from my Incognito session

Companies that own the websites I visited during the session probably do not receive the data from my Incognito session

Companies that own the websites I visited during the session do not receive the data from my Incognito session

☐ I don't feel I have enough information to answer this question



Continue

G.1-16

76%

(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)

While in Incognito mode, does your internet service provider receive or not receive the data from your Incognito session (such as **IP address**, **URLs of the sites you visit**, and **cookies**)?

Please base your answer on the screens you reviewed.

(Select a point on the scale. If you do not have enough information, please select "I don't feel I have enough information to answer this question")

My internet service provider **does** receive the data from my Incognito session

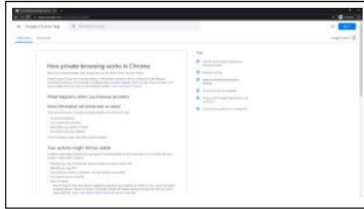

My internet service provider **probably** receives the data from my Incognito session

It is **uncertain** whether my internet service provider receives the data from my Incognito session or not

My internet service provider **probably does not** receive the data from my Incognito session

My internet service provider **does not** receive the data from my Incognito session

☐ I don't feel I have enough information to answer this question



Continue

76%

(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)

While in Incognito mode, do companies that provide analytics and advertising services to websites you visited during the session receive or not receive the data from your Incognito session (such as **IP address**, **URLs of the sites you visit**, and **cookies**)?

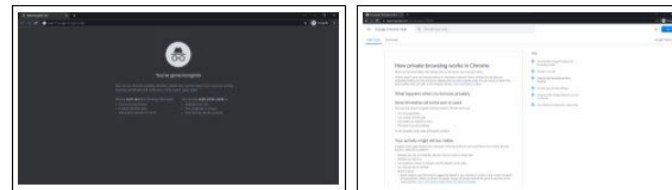
Please base your answer on the screens you reviewed.

(Select a point on the scale. If you do not have enough information, please select "I don't feel I have enough information to answer this question")

● ————— ● ————— ● ————— ● ————— ●

Companies that provide analytics and advertising services to websites I visited during the session <u>do</u> receive the data from my Incognito session	Companies that provide analytics and advertising services to websites I visited during the session <u>probably</u> receive the data from my Incognito session	It is <u>uncertain</u> whether companies that provide analytics and advertising services to websites I visited during the session receive the data from my Incognito session or not	Companies that provide analytics and advertising services to websites I visited during the session <u>probably do not</u> receive the data from my Incognito session	Companies that provide analytics and advertising services to websites I visited during the session <u>do not</u> receive the data from my Incognito session
---	---	---	--	---

☐ I don't feel I have enough information to answer this question



Continue

G.1-18

76%

Were you or were you not able to view the images clearly to answer the questions asked in this survey?
(Select only one option)

☐ I was not able to view the images clearly to answer the questions asked in this survey

☐ I was able to view the images clearly to answer the questions asked in this survey

☐ Don't know / Unsure

Continue

80%

Prior to this survey, were you or were you not aware of any lawsuits related to private browsing mode?
(Select only one option)

☐ I was not aware of any lawsuit related to private browsing mode

☐ I was aware of at least one lawsuit related to private browsing mode

☐ Don't know / Unsure

Continue

84%

You indicated that you were aware of at least one lawsuit regarding private browsing mode. Please describe the lawsuit(s) you were aware of:

(Please type in your response. If you do not know the answer or are unsure, please select "Don't know / Unsure")

☐ Don't know / Unsure

Continue

88%

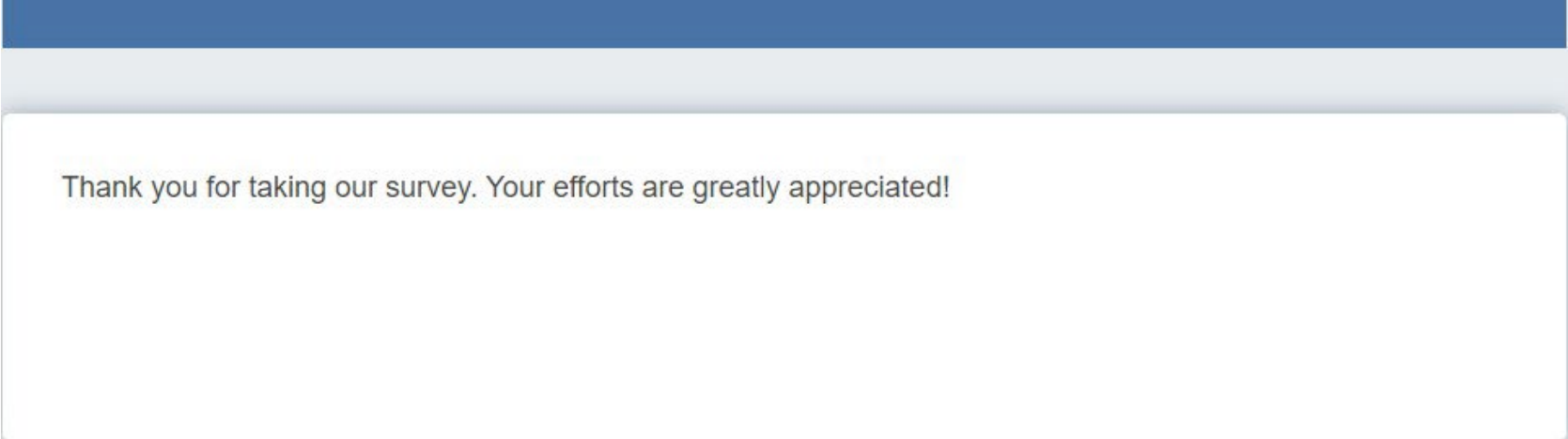
In the past three months, have you or have you not taken any other survey related to private browsing mode?
(Select only one option)

☐ I have not taken a survey related to private browsing mode

☐ I have taken a survey related to private browsing mode

☐ Don't know / Unsure

Continue



Thank you for taking our survey. Your efforts are greatly appreciated!

APPENDIX G.2
INTERPRETATION SURVEY
SCREENSHOTS
(SPLASH SCREEN WITH
POLICIES (HIGHLIGHTED)
GROUP)

0%

Please enter the code exactly as it appears in the image below and then click "Continue" to continue.

8CKHZQ

Continue

2%

Thank you for participating in our study. Your opinions are very important to us. If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the "Don't know / Unsure" option or the "I don't feel I have enough information to answer this question" option. There are no right or wrong answers.

Your answers will be kept in strict confidence and the results of this study will not be used to try to sell you anything. Trademarks and logos are all the intellectual property of their respective owners.

If you wear glasses or corrective lenses when using a desktop computer, laptop computer, mobile phone, or tablet, please wear them throughout the survey.

Please do not use the "Back" button of your browser while taking the survey. This survey will take less than 15 minutes of your time. When you are ready to get started, please select the "Continue" button.

Continue

5%

What is your age?
(Select only one option)

☐ 60 or older

☐ 50 – 59

☐ 40 – 49

☐ 30 – 39

☐ 18 – 29

☐ Under 18

☐ Prefer not to answer

Continue

8%

Are you...?

(Select only one option)

☐ Female

☐ Male

☐ Other

☐ Prefer not to answer

Continue

11%

In which state do you live?
(Select only one option)

Select one... ▾

☐ Prefer not to answer

☐ Don't know / Unsure

Continue

16%

Have you or any member of your household ever worked for any of the following types of companies?
(Select all that apply)

- ☐ A car dealership
- ☐ A construction company
- ☐ A healthcare provider or medical office
- ☐ A technology company or technology consultancy
- ☐ A clothing retailer
- ☐ An academic institution
- ☐ A marketing, market research, or advertising agency
- ☐ A law firm, legal services organization, or court
- ☐ A fitness center
- ☐ A real estate agency
- ☐ None of the above

Continue

29%

This question is to check your attention. Please select "South" from the answer options below.
(Select only one option)

☐ East

☐ North

☐ West

☐ South

☐ None of the above

☐ Don't know / Unsure

Continue

32%

Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use?
(Select all that apply)

☐ Opera

☐ Safari

☐ Odeon

☐ Microsoft Edge

☐ DuckDuckGo

☐ Internet Explorer

☐ Google Chrome

☐ Brave

☐ Mozilla Firefox

☐ Other (Please specify)

☐ Don't know / Unsure

Continue

37%

In the past six months, which of the following features, if any, have you used on your internet browser(s)?
(Select all that apply)

☐ Screenshot tool

☐ Private browsing mode

☐ Bookmarks

☐ Website translator

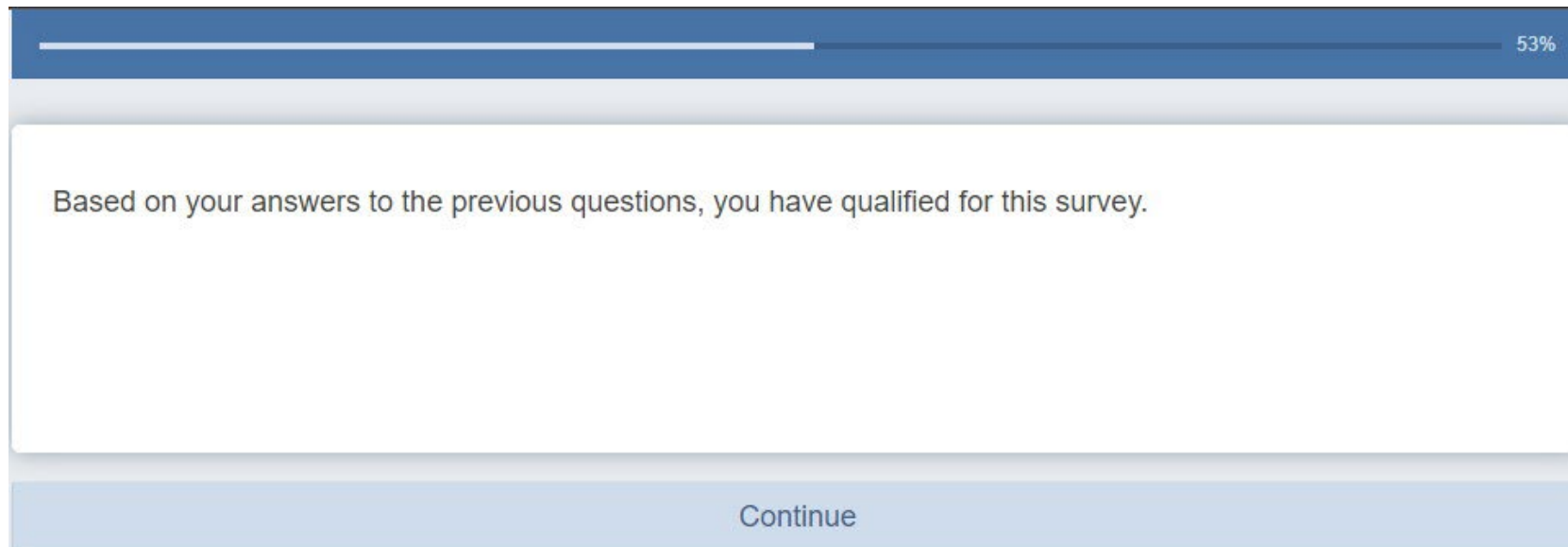
☐ Customized home page

☐ Dark mode for visual display

☐ Other (Please specify)

☐ Don't know / Unsure

Continue



A survey progress bar at the top shows 53% completion. Below it, a white box contains the text: "Based on your answers to the previous questions, you have qualified for this survey." At the bottom is a light blue button labeled "Continue".

53%

Based on your answers to the previous questions, you have qualified for this survey.

Continue

55%

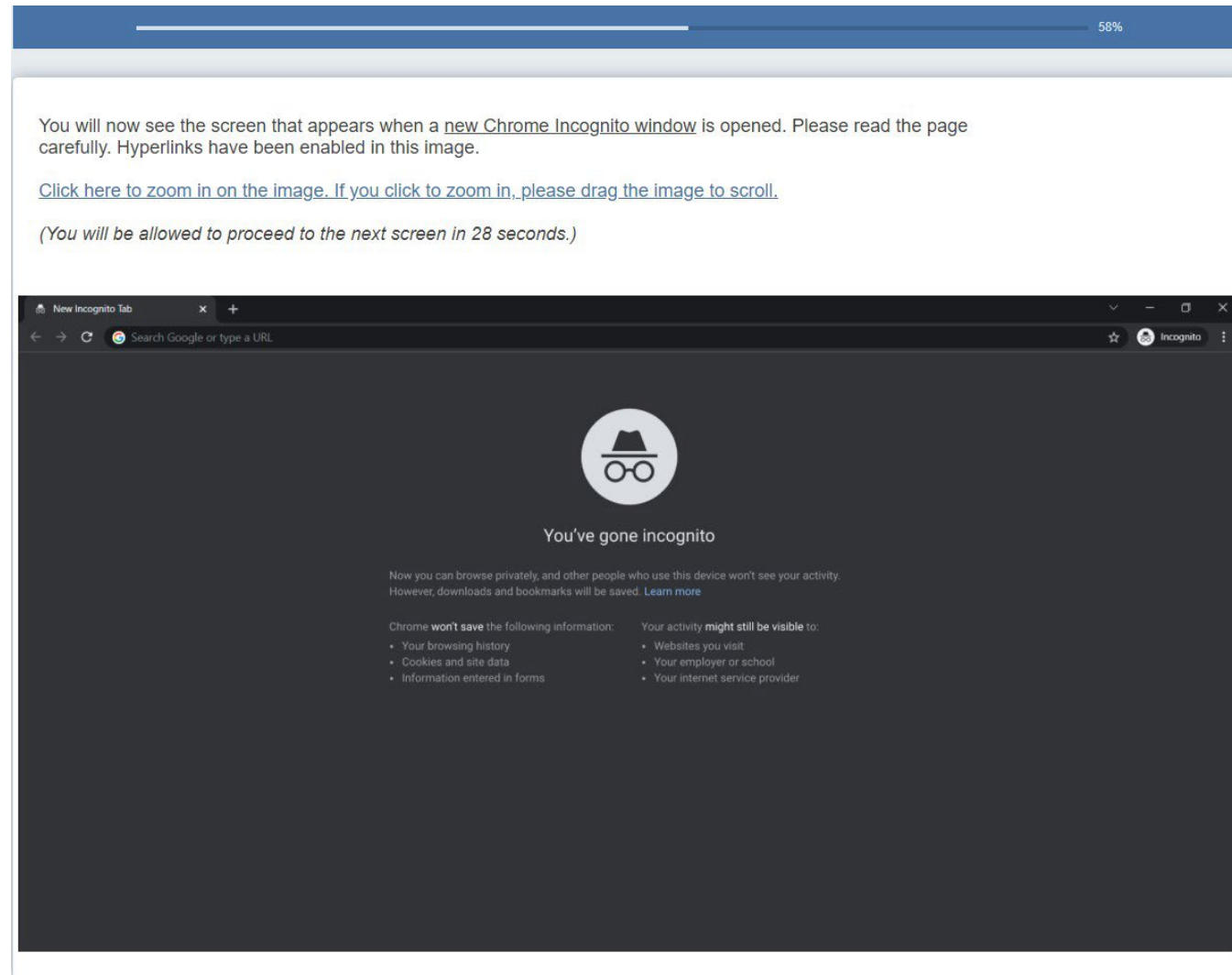
This survey is about private browsing mode. You have been selected to answer questions about Chrome, which is a browser from a company named Google.

Next, you will see images of a screen that appears when you enable Chrome's Incognito mode and a page that includes additional information for private browsing, as well as Google's Privacy Policy and the Chrome Privacy Notice. Please consider these images with the intention to use private browsing mode. After, you will be asked to answer a few questions. You will be able to view these images again as you answer the questions.

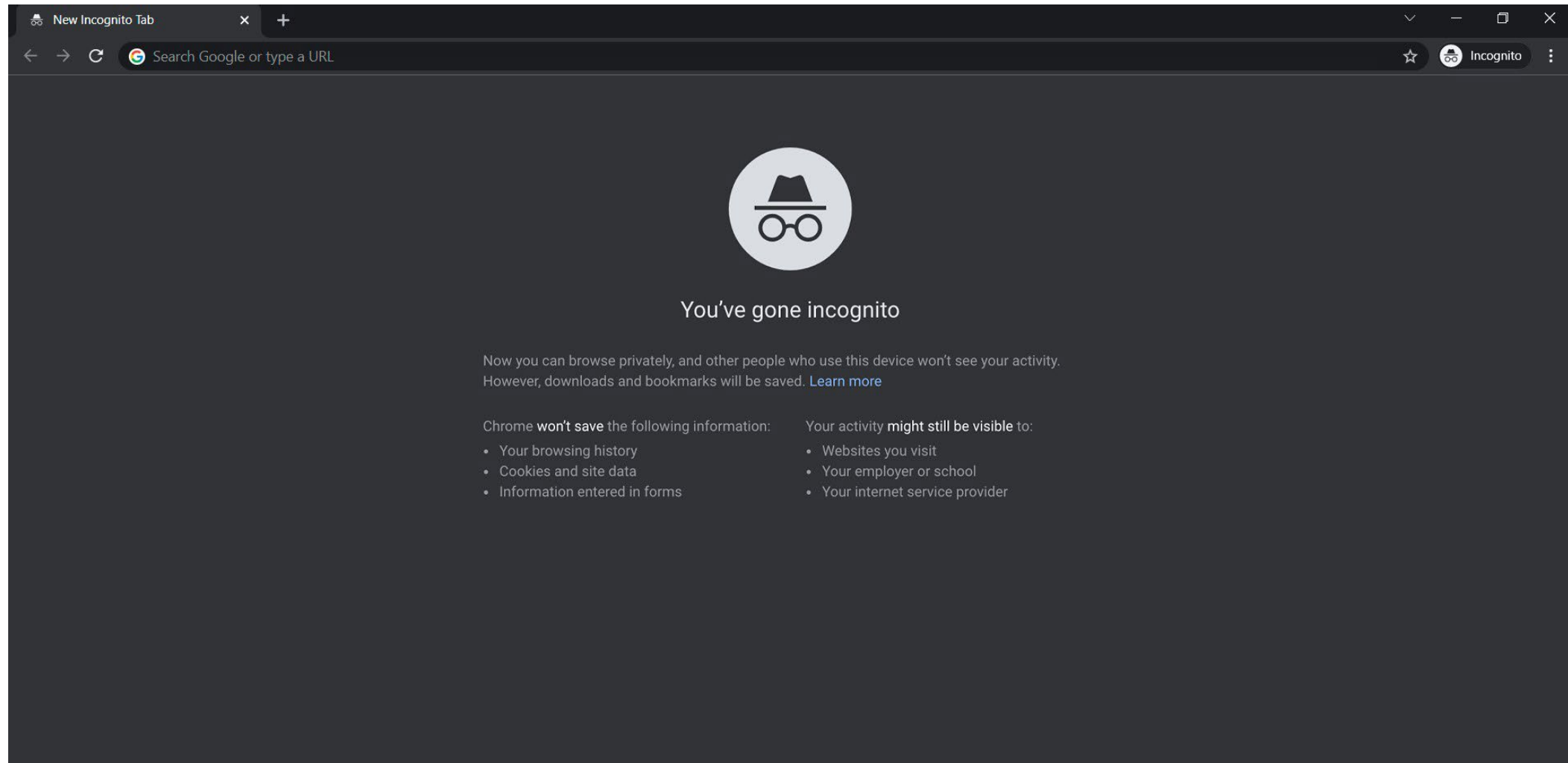
Please do not use your browser's "Back" button.

If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the "Don't know / Unsure" option or the "I don't feel I have enough information to answer this question" option. There are no right or wrong answers.

Continue



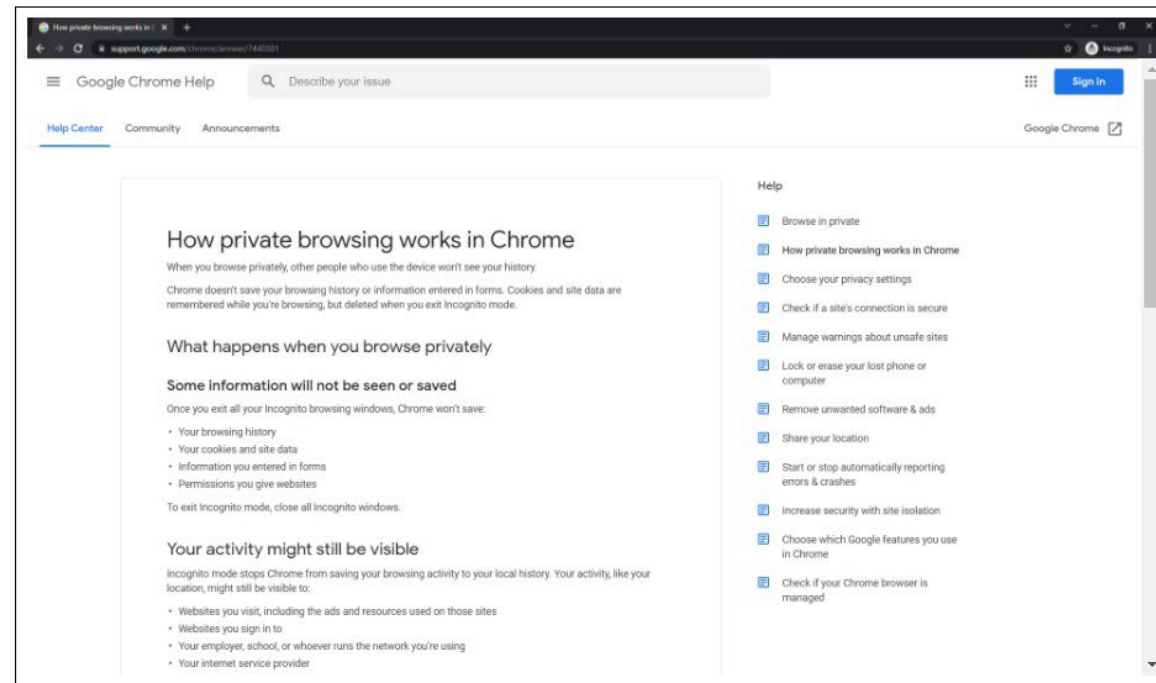
The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.



You will now see the following screen that would appear if you clicked "Learn more" on the previous page. Hyperlinks and any other clickable elements in this image have been disabled.

[Click here to zoom in on the image.](#) If you click to zoom in, please drag the image to scroll.

(You will be allowed to proceed to the next screen in 27 seconds.)



The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.

The screenshot shows the Google Chrome Help page. At the top, there is a navigation bar with the Google Chrome logo, a search bar labeled 'Describe your issue', and a 'Sign in' button. Below the navigation bar, there are links for 'Help Center', 'Community', and 'Announcements'. The main content area is titled 'How private browsing works in Chrome' and contains the following text:

When you browse privately, other people who use the device won't see your history.

Chrome doesn't save your browsing history or information entered in forms. Cookies and site data are remembered while you're browsing, but deleted when you exit Incognito mode.

What happens when you browse privately

Some information will not be seen or saved

Once you exit all your Incognito browsing windows, Chrome won't save:

- Your browsing history
- Your cookies and site data
- Information you entered in forms
- Permissions you give websites

To exit Incognito mode, close all Incognito windows.

Your activity might still be visible

Incognito mode stops Chrome from saving your browsing activity to your local history. Your activity, like your location, might still be visible to:

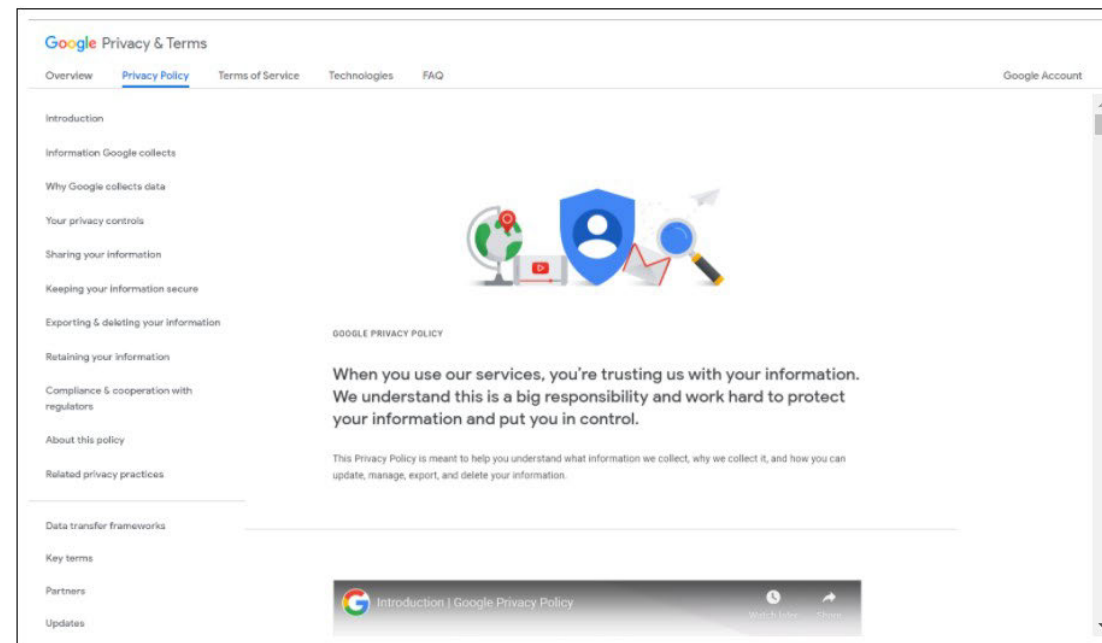
On the right side of the page, there is a 'Help' section with a list of links:

- Browse in private
- How private browsing works in Chrome
- Choose your privacy settings
- Check if a site's connection is secure
- Manage warnings about unsafe sites
- Lock or erase your lost phone or computer
- Remove unwanted software & ads
- Share your location
- Start or stop automatically reporting errors & crashes
- Increase security with site isolation
- Choose which Google features you use in Chrome
- Check if your Chrome browser is managed

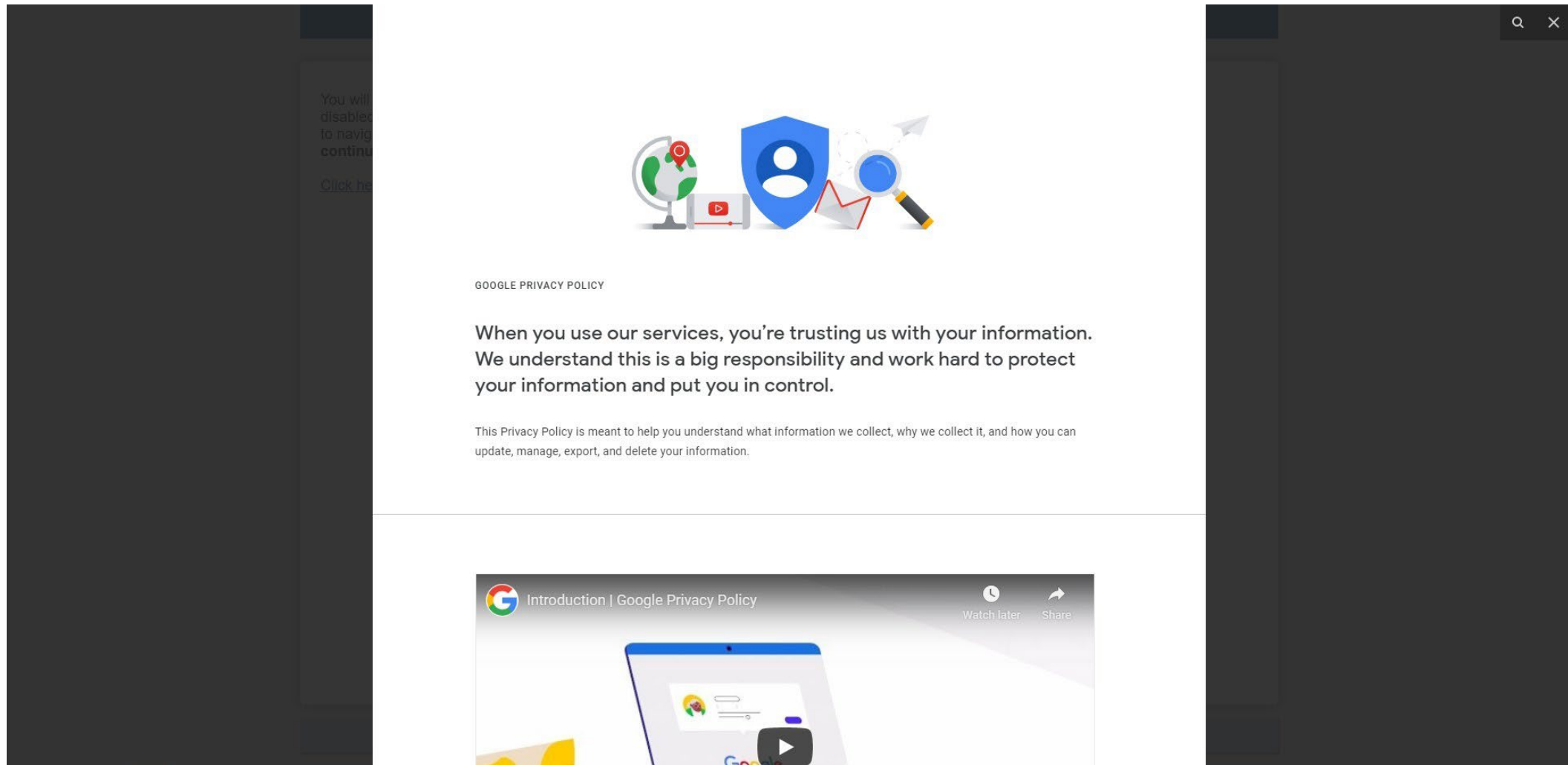
You will now see the [Google Privacy Policy](#). Please carefully read this policy. Within the policy, hyperlinks have been disabled; however, if you click on certain Table of Contents section headings on the left-hand side, you will be able to navigate to specific policy sections. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

[Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.](#)

(You will be allowed to proceed to the next screen in 25 seconds.)



The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.

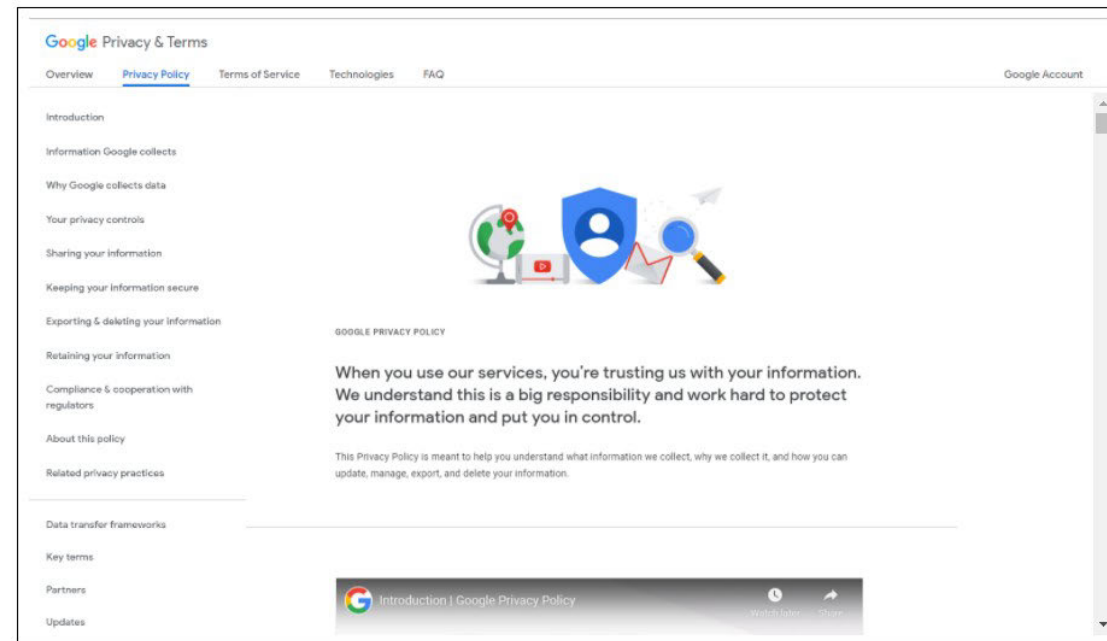


G.2-17

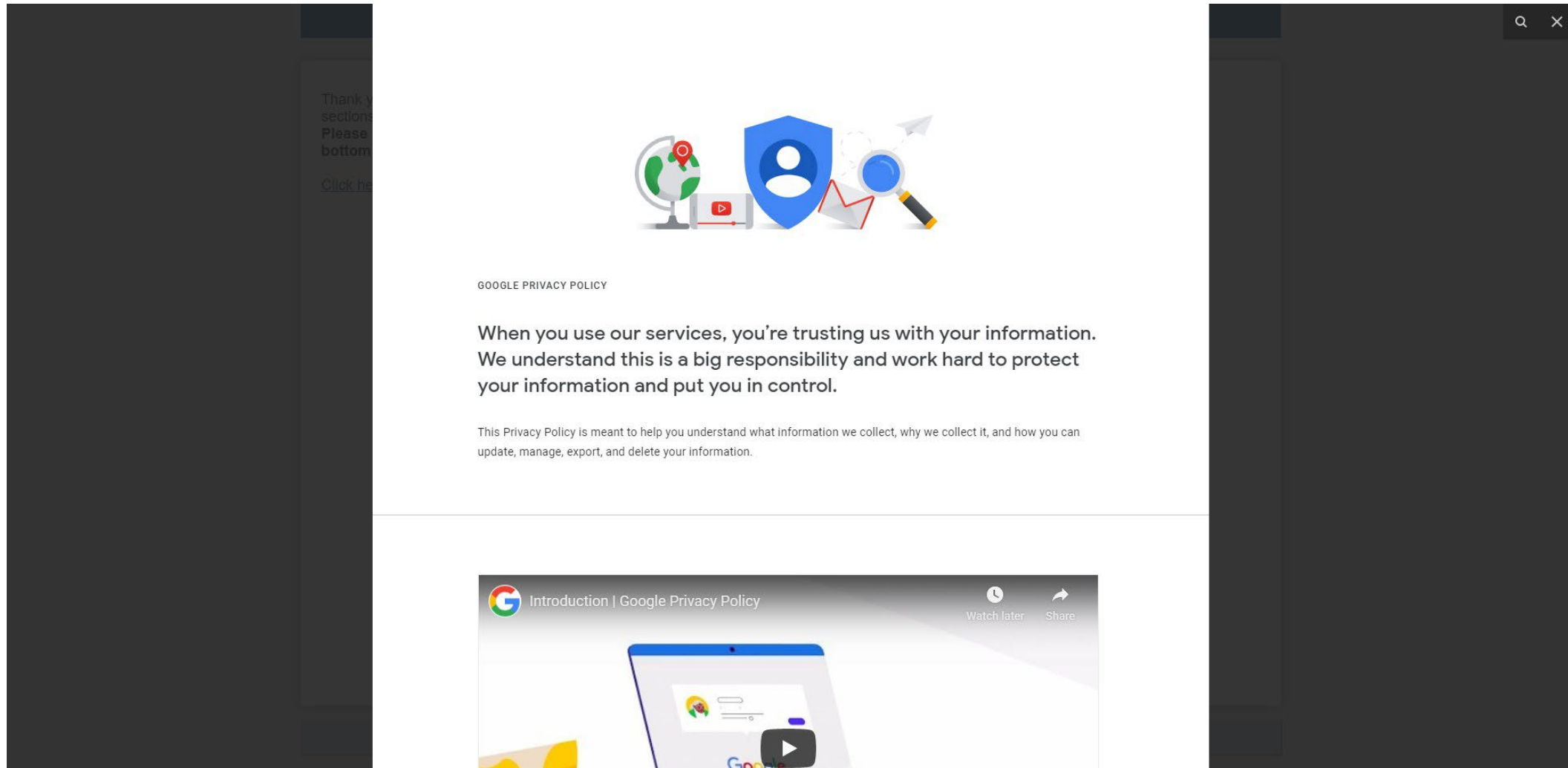
Thank you for reviewing the [Google Privacy Policy](#). Before continuing, please take another look at the highlighted sections and make sure you understand them. As you answer questions, you will be able to review the policy again. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

[Click here to zoom in on the image. If you click to zoom in, please drag the image to scroll.](#)

(You will be allowed to proceed to the next screen in 12 seconds.)



The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.



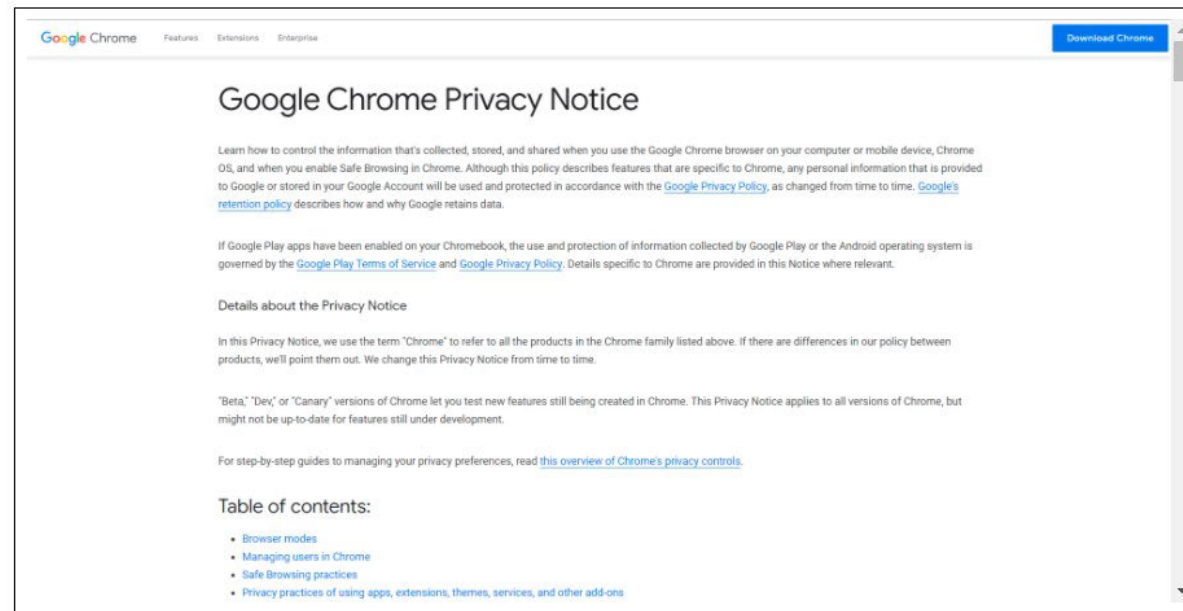
G.2-19

65%

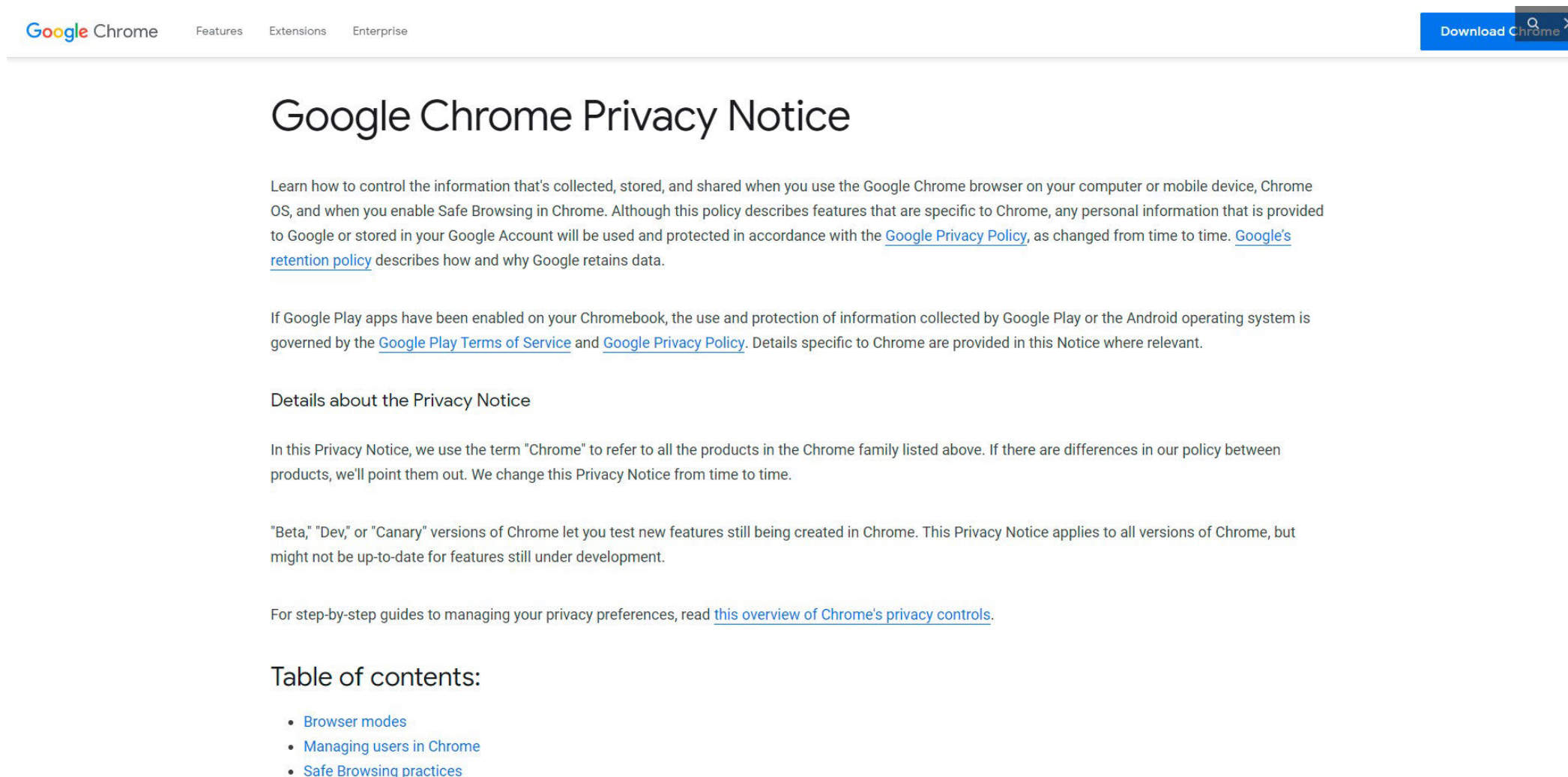
You will now see the [Chrome Privacy Notice](#). Please read it carefully. Within the policy, hyperlinks have been disabled; however, you can navigate to specific sections of the policy by clicking on the headings under the Table of Contents. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

[Click here to zoom in on the image.](#) If you click to zoom in, please drag the image to scroll.

(You will be allowed to proceed to the next screen in 27 seconds.)



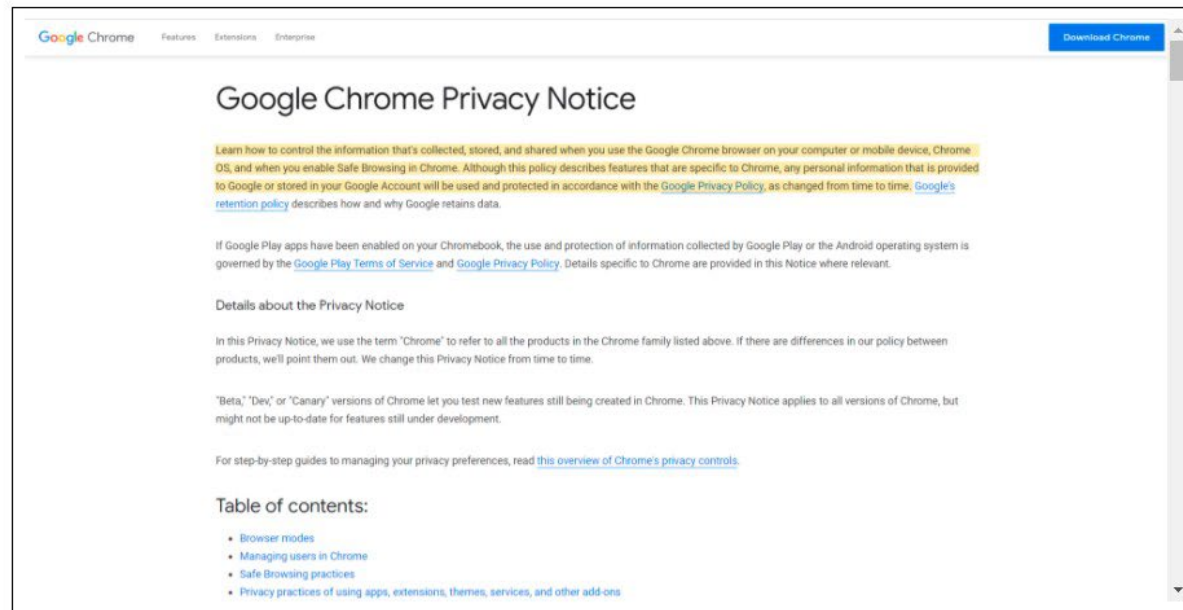
The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.



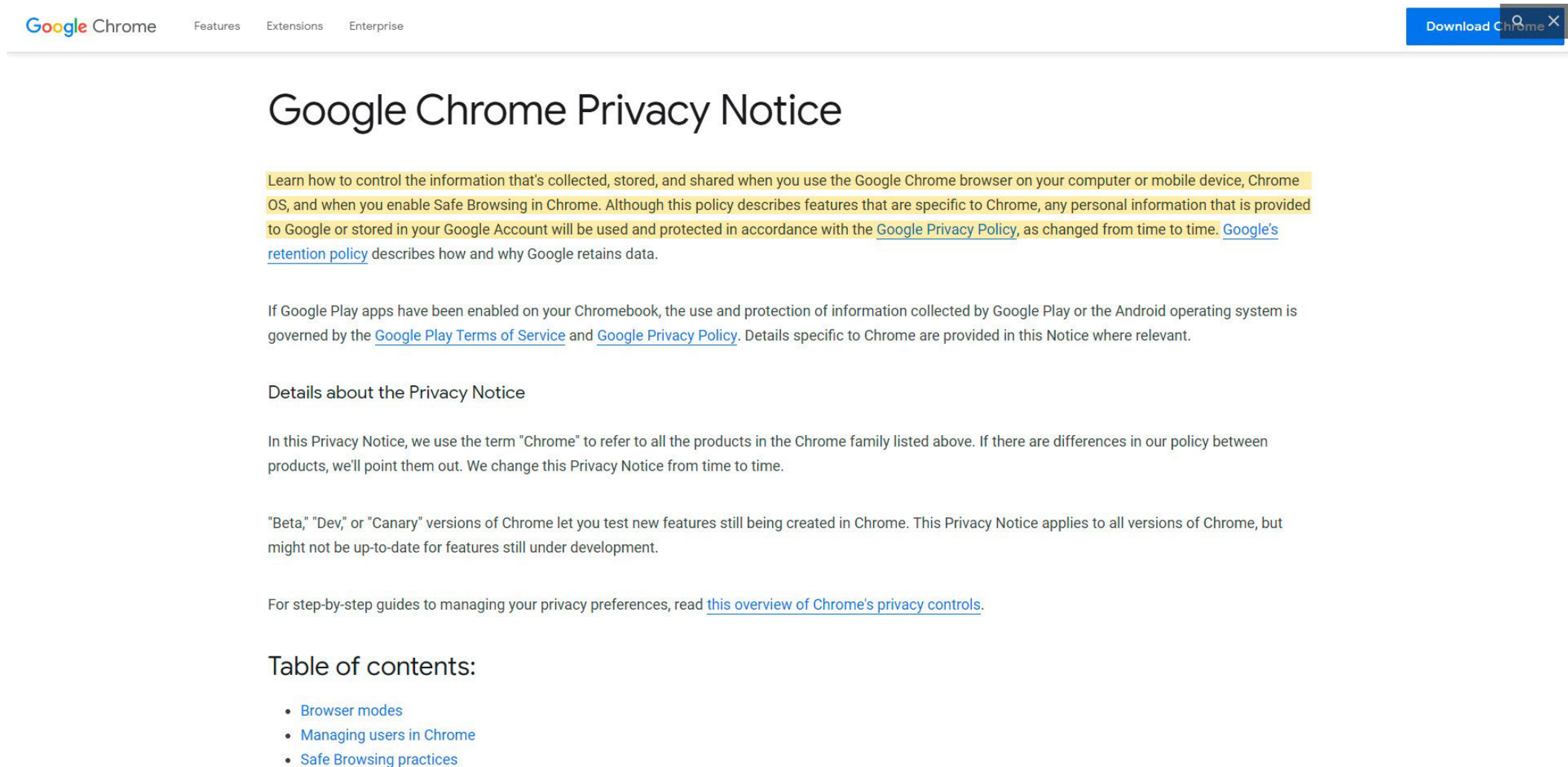
Thank you for reviewing the [Chrome Privacy Notice](#). Before continuing, please take another look at the highlighted sections and make sure you understand them. As you answer questions, you will be able to review the notice again. **Please scroll through the window below to see the whole image. The continue button can be found at the bottom of the page.**

[Click here to zoom in on the image.](#) [If you click to zoom in, please drag the image to scroll.](#)

(You will be allowed to proceed to the next screen in 11 seconds.)



The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.



68%

(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)

Based on the screens that you reviewed, please select one of the following regarding [URLs of the sites you visit](#) during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):
(Select a point on the scale. If you do not have enough information, please select "I don't feel I have enough information to answer this question")

Google does
receive this
information





Google
probably
receives this
information

It is uncertain
whether
Google
receives this
information or
not

Google
probably does
not receive
this
information

Google does
not receive
this
information

☐ I don't feel I have enough information to answer this question



Continue

72%

(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)

Based on the screens that you reviewed, please select one of the following regarding **IP address** during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):
(Select a point on the scale. If you do not have enough information, please select "I don't feel I have enough information to answer this question")

Google does receive this information





Google probably receives this information

It is uncertain whether Google receives this information or not

Google probably does not receive this information

Google does not receive this information

☐ I don't feel I have enough information to answer this question



Continue





78%

(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)

Based on the screens that you reviewed, please select one of the following regarding cookies placed on your browser during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):
(Select a point on the scale. If you do not have enough information, please select "I don't feel I have enough information to answer this question")

Google does receive this information Google probably receives this information It is uncertain whether Google receives this information or not Google probably does not receive this information Google does not receive this information

☐ I don't feel I have enough information to answer this question



Continue

84%

Were you or were you not able to view the images clearly to answer the questions asked in this survey?

(Select only one option)

☐ I was able to view the images clearly to answer the questions asked in this survey

☐ I was not able to view the images clearly to answer the questions asked in this survey

☐ Don't know / Unsure

Continue

87%

Prior to this survey, were you or were you not aware of any lawsuits related to private browsing mode?
(Select only one option)

☐ I was aware of at least one lawsuit related to private browsing mode

☐ I was not aware of any lawsuit related to private browsing mode

☐ Don't know / Unsure

Continue

90%

You indicated that you were aware of at least one lawsuit regarding private browsing mode. Please describe the lawsuit(s) you were aware of:

(Please type in your response. If you do not know the answer or are unsure, please select "Don't know / Unsure")

☐ Don't know / Unsure

Continue

92%

In the past three months, have you or have you not taken any other survey related to private browsing mode?
(Select only one option)

☐ I have taken a survey related to private browsing mode

☐ I have not taken a survey related to private browsing mode

☐ Don't know / Unsure

Continue



Thank you for taking our survey. Your efforts are greatly appreciated!

APPENDIX G.3

LIKELIHOOD OF USE

SURVEY SCREENSHOTS

(ACTUAL LANGUAGE

GROUP)

0%

Please enter the code exactly as it appears in the image below and then click "Continue" to continue.

YL2QRF

Continue

3%

Thank you for participating in our study. Your opinions are very important to us. If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the "Don't know / Unsure" option or the "I don't feel I have enough information to answer this question" option. There are no right or wrong answers.

Your answers will be kept in strict confidence and the results of this study will not be used to try to sell you anything. Trademarks and logos are all the intellectual property of their respective owners.

If you wear glasses or corrective lenses when using a desktop computer, laptop computer, mobile phone, or tablet, please wear them throughout the survey.

Please do not use the "Back" button of your browser while taking the survey. This survey will take less than 15 minutes of your time. When you are ready to get started, please select the "Continue" button.

Continue

6%

What is your age?

(Select only one option)

☐ 60 or older

☐ 50 – 59

☐ 40 – 49

☐ 30 – 39

☐ 18 – 29

☐ Under 18

☐ Prefer not to answer

Continue

9%

Are you...?

(Select only one option)

☐ Male

☐ Female

☐ Other

☐ Prefer not to answer

Continue

13%

In which state do you live?

(Select only one option)

Select one... ▼

☐ Prefer not to answer

☐ Don't know / Unsure

Continue

19%

Have you or any member of your household ever worked for any of the following types of companies?
(Select all that apply)

☐ A technology company or technology consultancy

☐ A real estate agency

☐ A construction company

☐ A healthcare provider or medical office

☐ An academic institution

☐ A clothing retailer

☐ A fitness center

☐ A marketing, market research, or advertising agency

☐ A law firm, legal services organization, or court

☐ A car dealership

☐ None of the above

Continue

26%

This question is to check your attention. Please select “South” from the answer options below.
(Select only one option)

☐ South

☐ North

☐ West

☐ East

☐ None of the above

☐ Don't know / Unsure

Continue

30%

Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use?
(Select all that apply)

☐ Google Chrome

☐ Mozilla Firefox

☐ Microsoft Edge

☐ DuckDuckGo

☐ Safari

☐ Internet Explorer

☐ Brave

☐ Odeon

☐ Opera

☐ Other (Please specify)

☐ Don't know / Unsure

Continue

41%

In the past six months, which of the following features, if any, have you used on your internet browser(s)?
(Select all that apply)

☐ Bookmarks

☐ Screenshot tool

☐ Customized home page

☐ Website translator

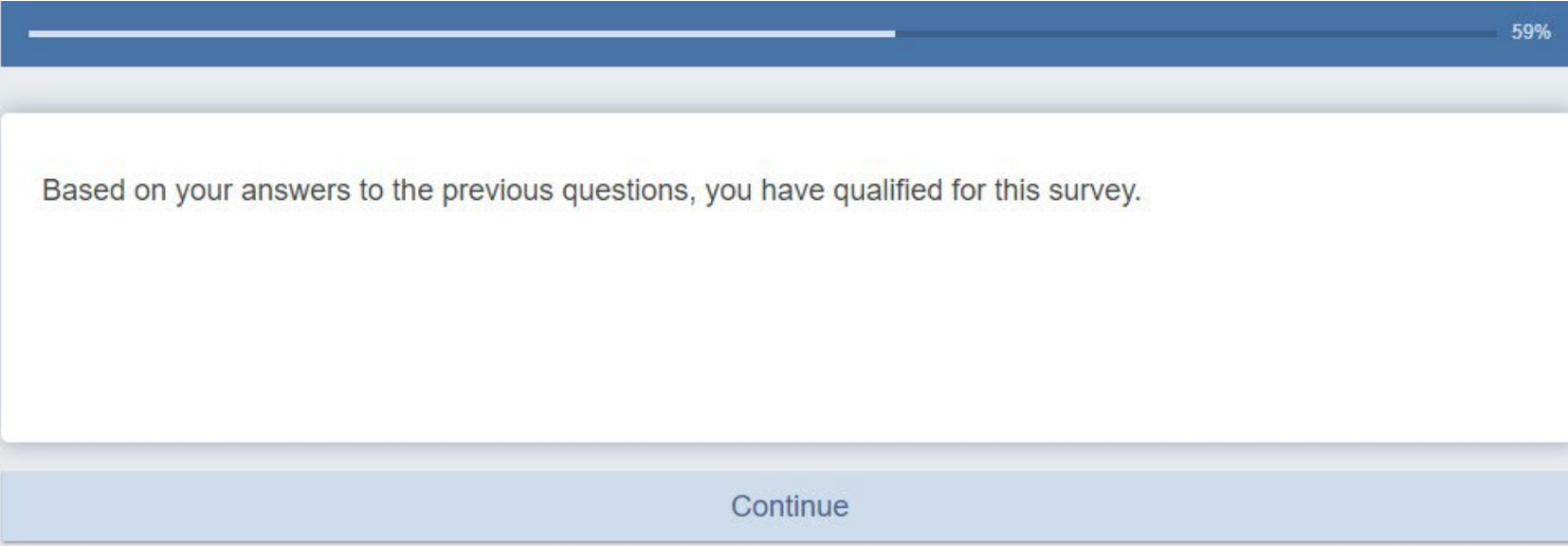
☐ Dark mode for visual display

☐ Private browsing mode

☐ Other (Please specify)

☐ Don't know / Unsure

Continue



A survey progress bar at the top shows 59% completion. Below it, a white box contains the text: "Based on your answers to the previous questions, you have qualified for this survey." At the bottom is a light blue button labeled "Continue".

59%

Based on your answers to the previous questions, you have qualified for this survey.

Continue

63%

You will first be presented with a scenario. Next, you will see an image. After, you will be asked to answer a few questions. You will be able to view any images again as you answer the questions.

Please do not use your browser's "Back" button.

If you don't know an answer to a question or if you don't have an opinion, please don't guess. Simply indicate this in your response by selecting the "Don't know / Unsure" option or the "I don't feel I have enough information to answer this question" option. There are no right or wrong answers.

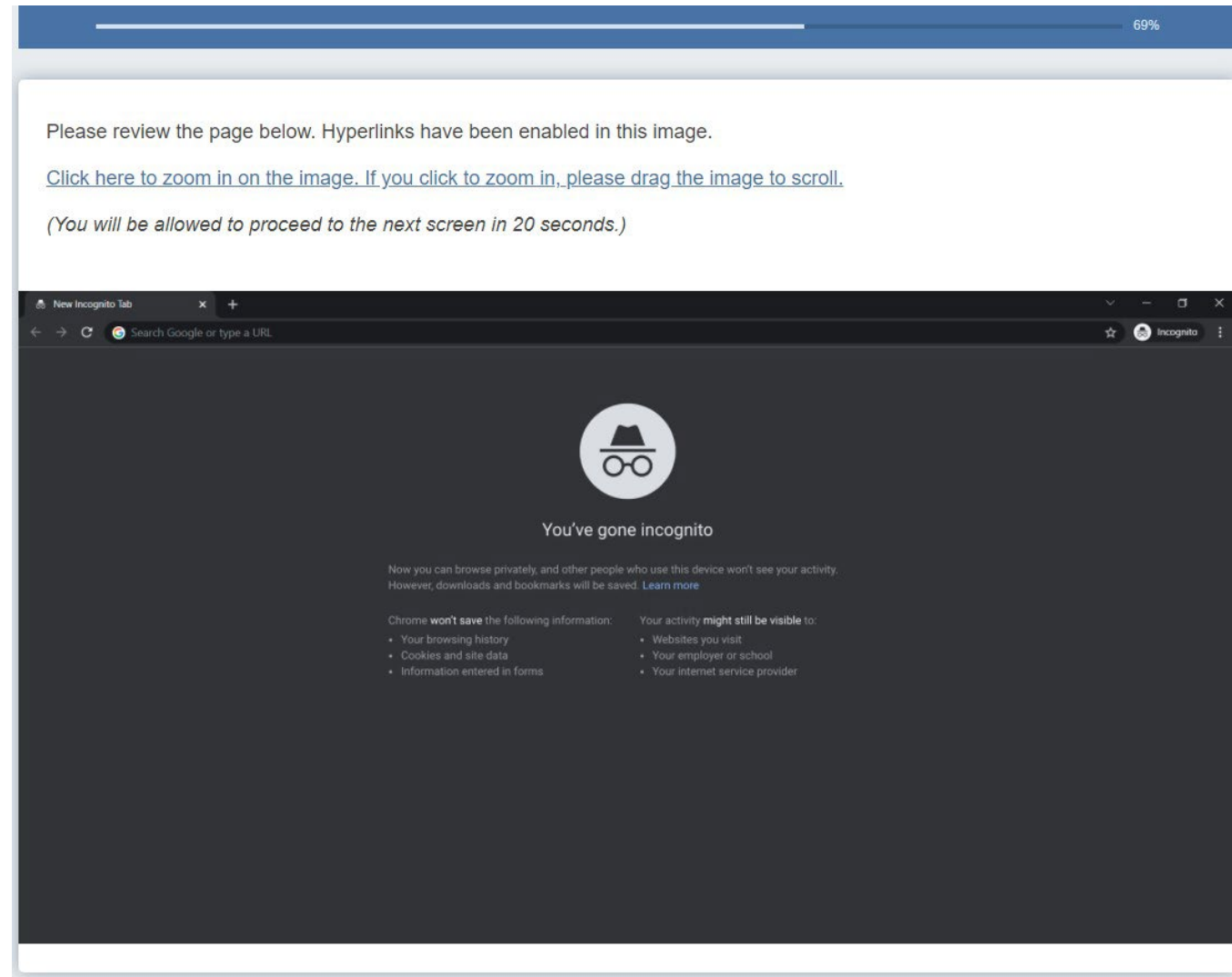
Continue

66%

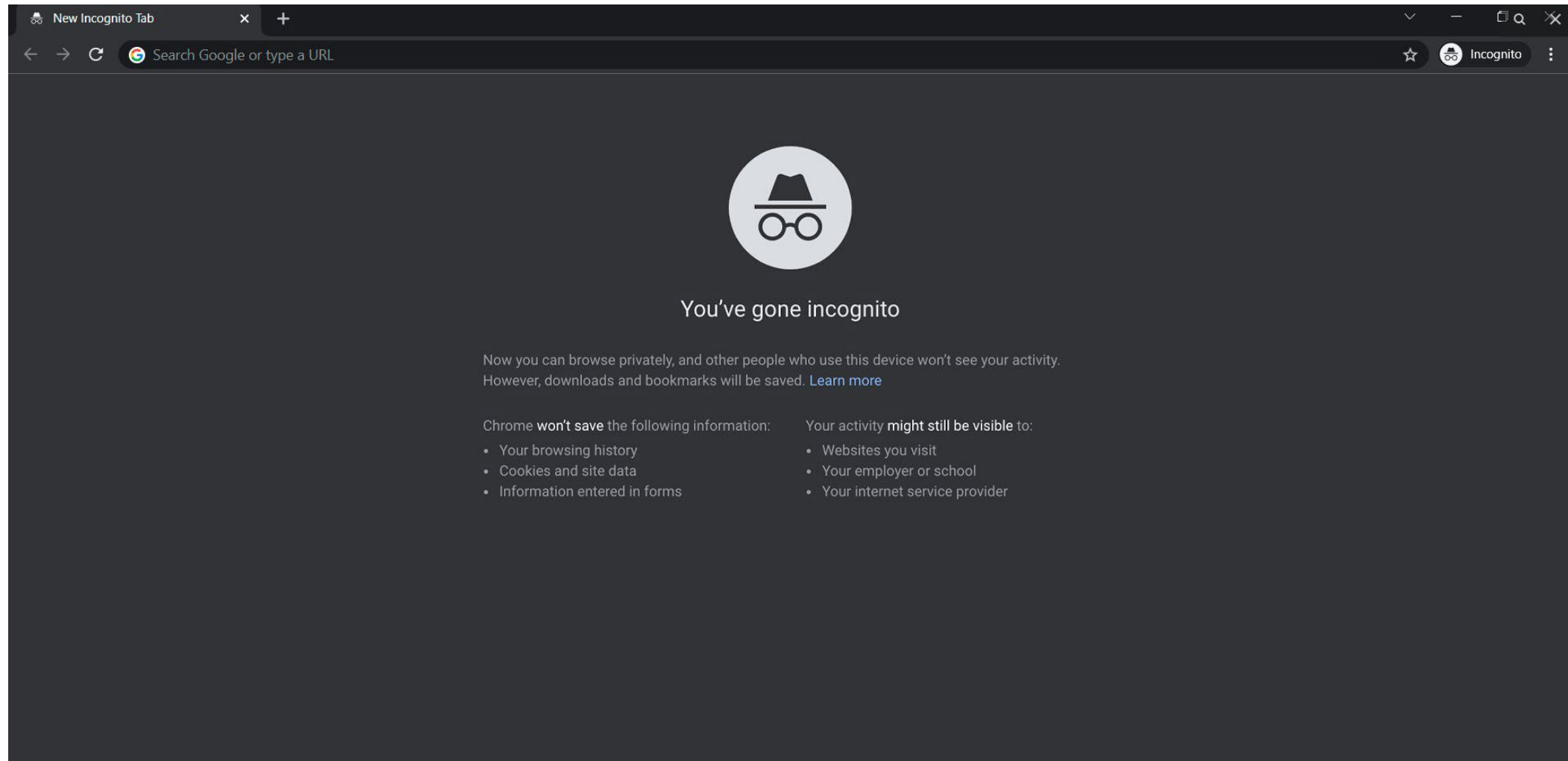
Imagine that you are researching online about a sensitive topic. You decide to browse the web in private browsing mode.

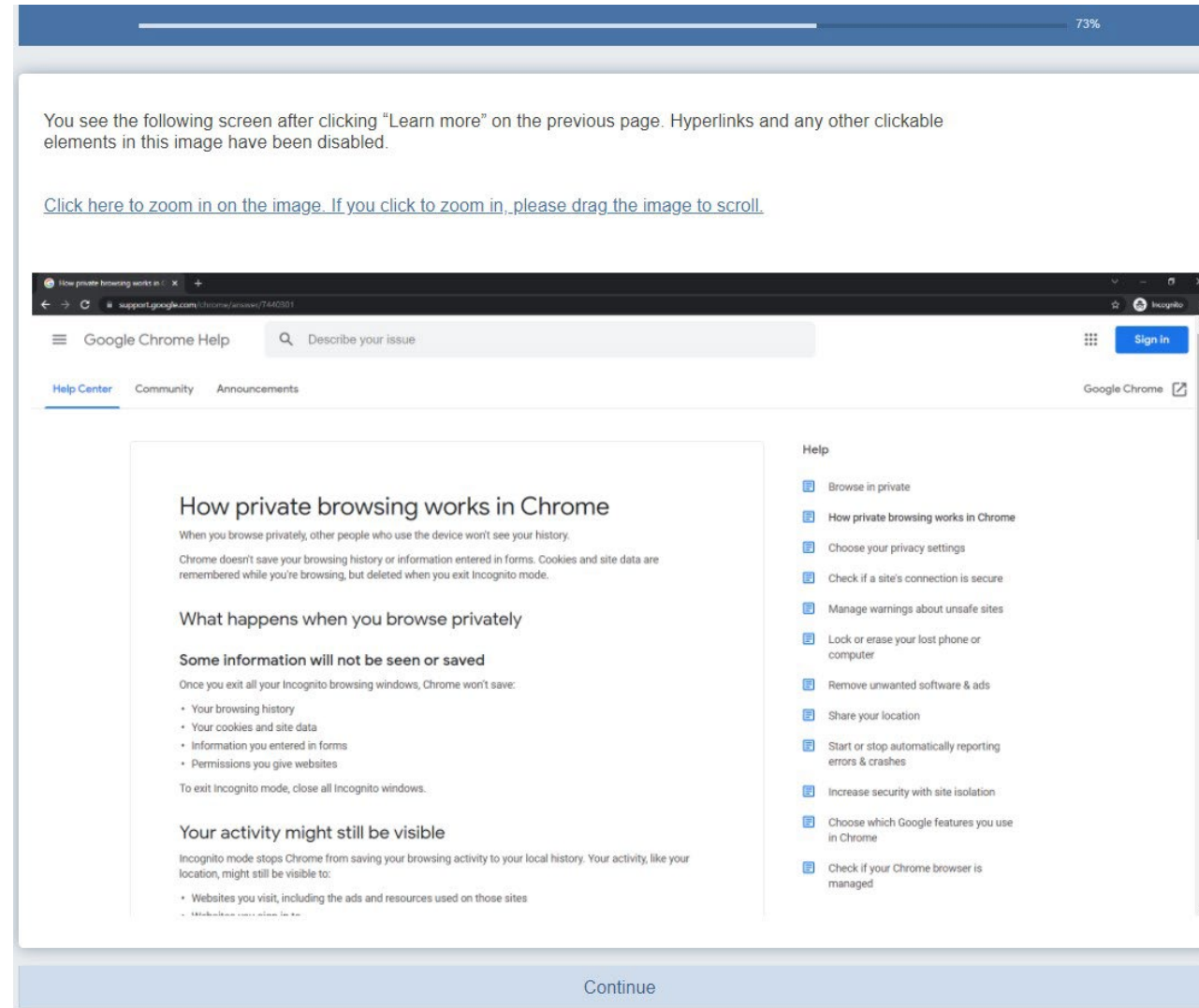
On the next page, you will see an image of the Chrome browser in Incognito mode.

Continue

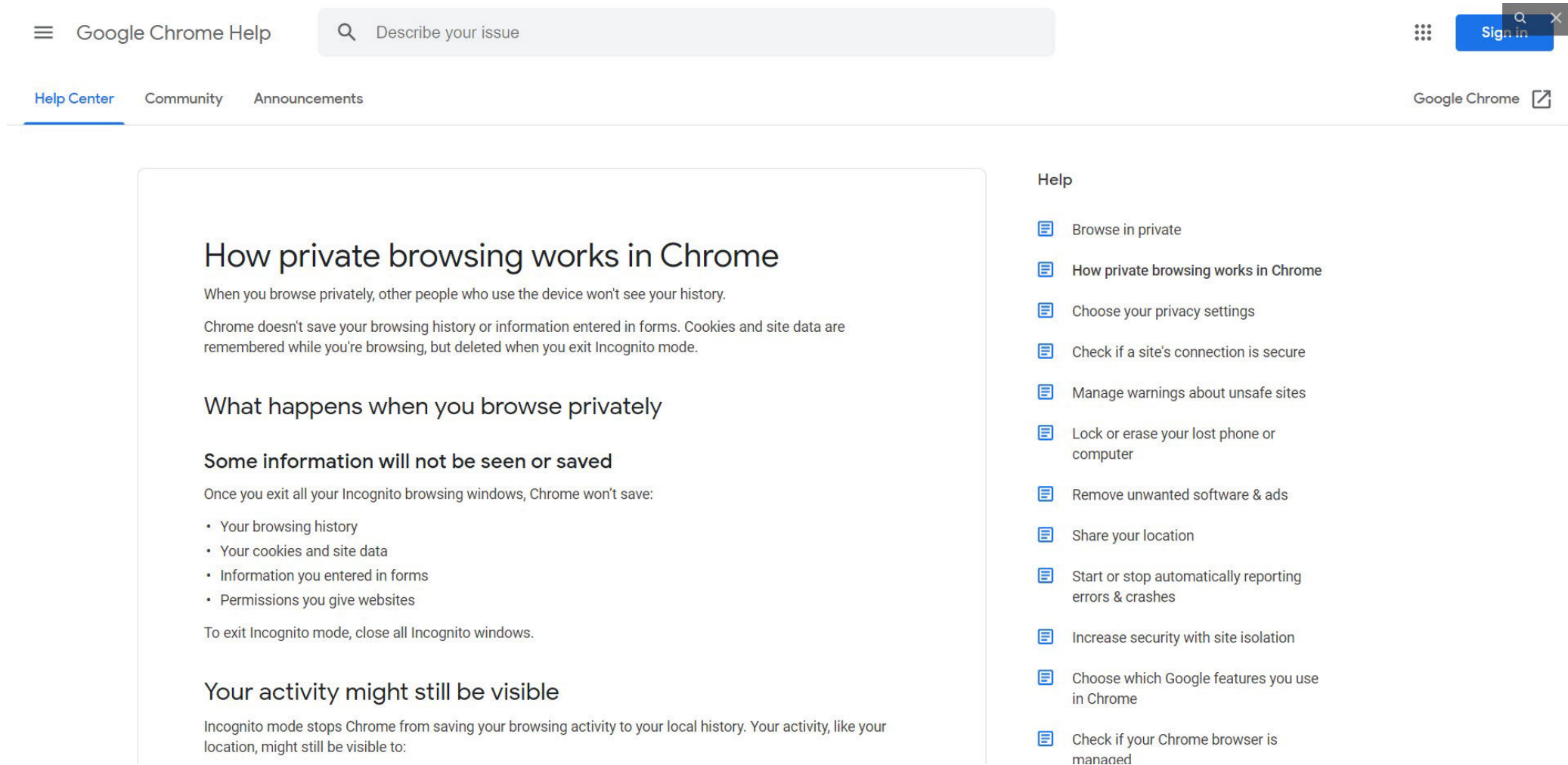


The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.





The following is the pop-up window that appears when a respondent clicks to zoom in on the previous page. The respondent can drag to navigate around the image.



73%

(The thumbnails contain the images that you have viewed earlier. You can click on the thumbnails to see the enlarged versions of these images.)

How likely or unlikely are you to use the Chrome browser in Incognito mode for your online research about the sensitive topic mentioned in the previous scenario?

(Select a point on the scale. If you do not have enough information, please select "I don't feel I have enough information to answer this question.")

Likely to use the Chrome browser in Incognito mode



Somewhat likely to use the Chrome browser in Incognito mode

Neither likely nor unlikely to use the Chrome browser in Incognito mode

Somewhat unlikely to use the Chrome browser in Incognito mode

Unlikely to use the Chrome browser in Incognito mode

☐ I don't feel I have enough information to answer this question



Continue

77%

Were you or were you not able to view the images clearly to answer the questions asked in this survey?
(Select only one option)

☐ I was not able to view the images clearly to answer the questions asked in this survey

☐ I was able to view the images clearly to answer the questions asked in this survey

☐ Don't know / Unsure

Continue

84%

Prior to this survey, were you or were you not aware of any lawsuits related to private browsing mode?
(Select only one option)

☐ I was not aware of any lawsuit related to private browsing mode

☐ I was aware of at least one lawsuit related to private browsing mode

☐ Don't know / Unsure

Continue

87%

You indicated that you were aware of at least one lawsuit regarding private browsing mode. Please describe the lawsuit(s) you were aware of:

(Please type in your response. If you do not know the answer or are unsure, please select "Don't know / Unsure")

☐ Don't know / Unsure

Continue

90%

In the past three months, have you or have you not taken any other survey related to private browsing mode?
(Select only one option)

☐ I have not taken a survey related to private browsing mode

☐ I have taken a survey related to private browsing mode

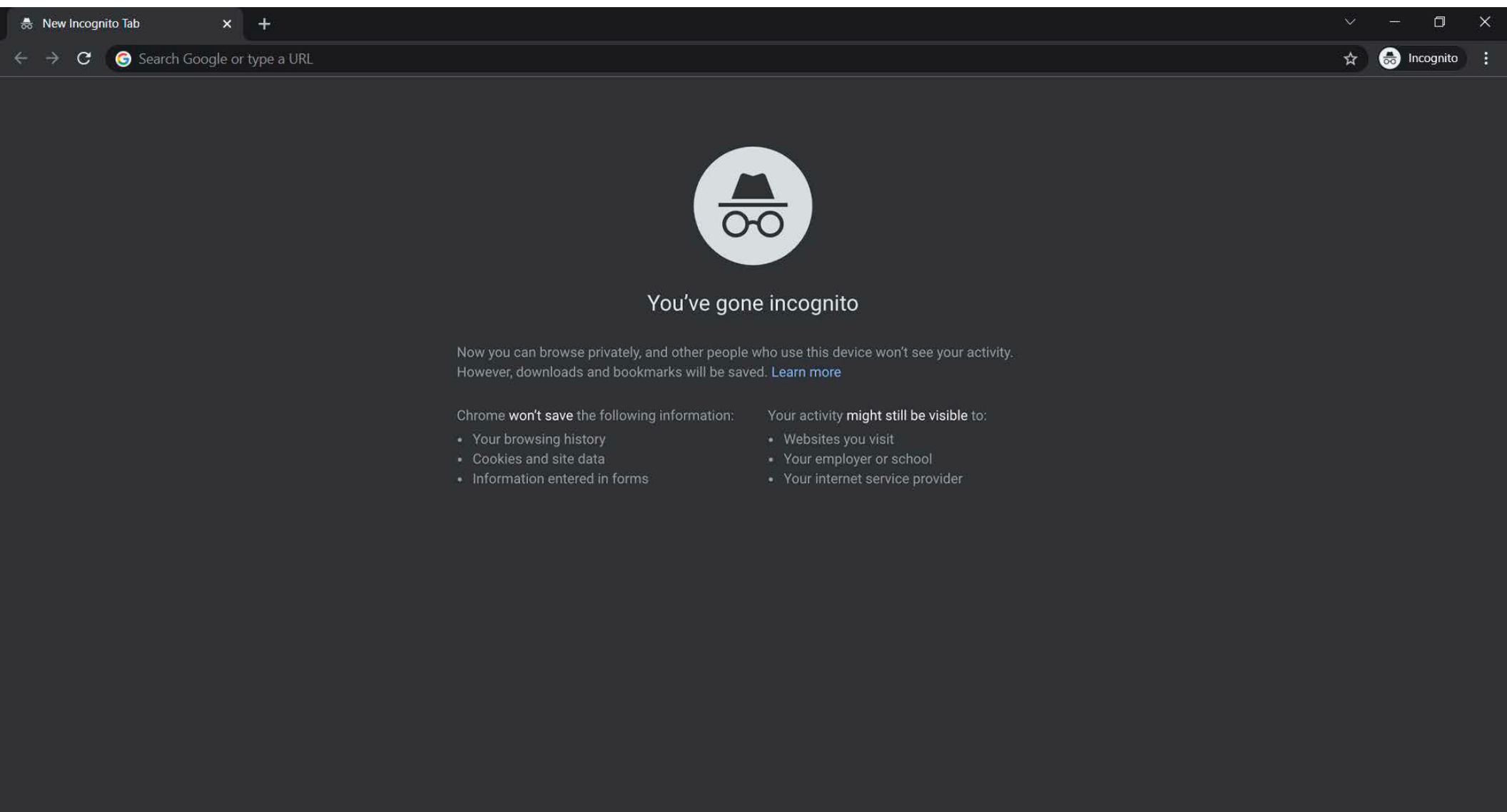
☐ Don't know / Unsure

Continue



Thank you for taking our survey. Your efforts are greatly appreciated!

APPENDIX H.1
CHROME
INCOGNITO SPLASH SCREEN
(ACTUAL LANGUAGE)



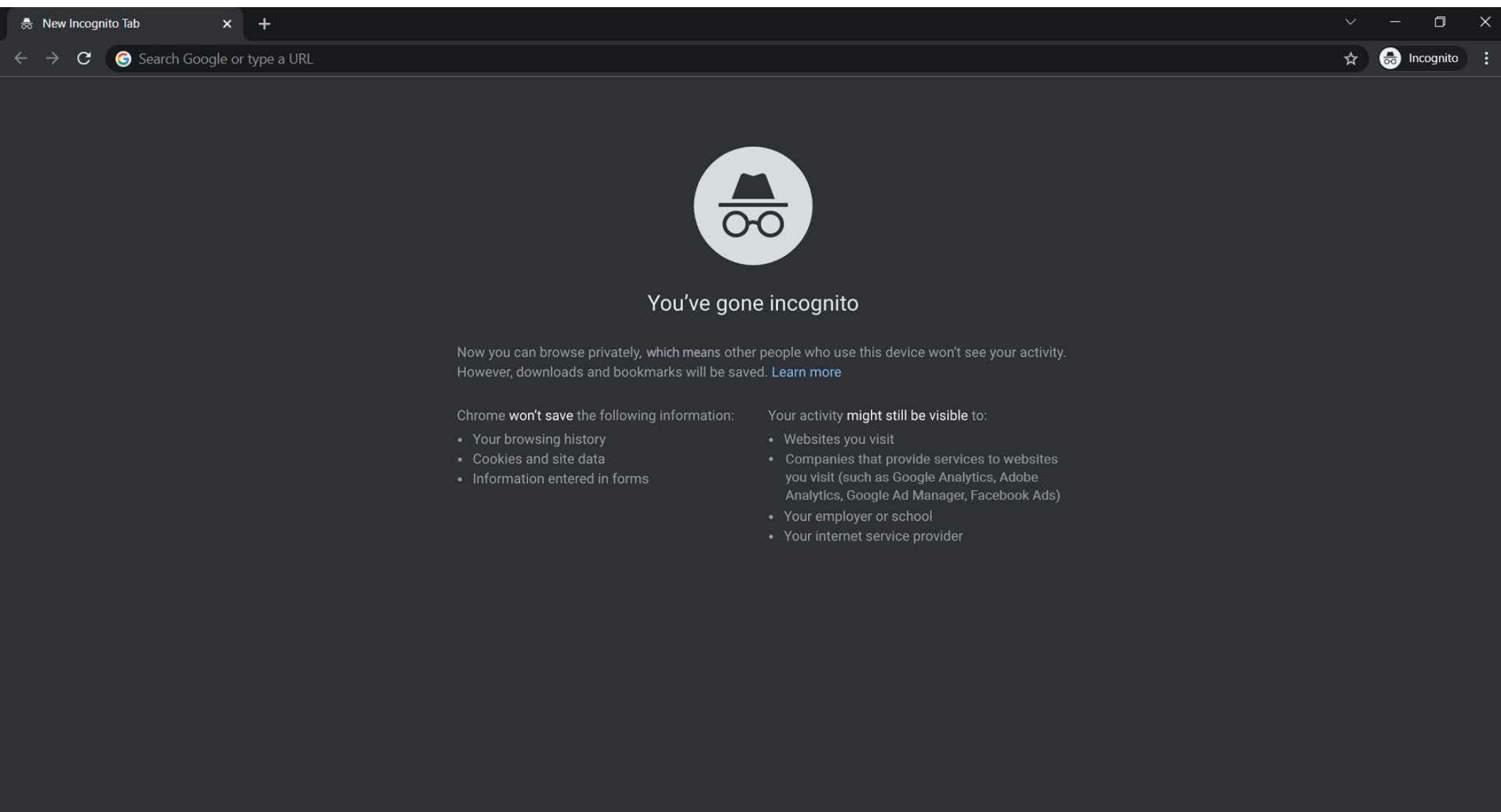
APPENDIX H.2

CHROME

INCOGNITO SPLASH

SCREEN (ALTERNATIVE

LANGUAGE)



APPENDIX I.1
CHROME
“LEARN MORE” PAGE
(ACTUAL LANGUAGE)

Google Chrome Help

Describe your issue

Sign in

[Help Center](#)
[Community](#)
[Announcements](#)

Google Chrome

How private browsing works in Chrome

When you browse privately, other people who use the device won't see your history.

Chrome doesn't save your browsing history or information entered in forms. Cookies and site data are remembered while you're browsing, but deleted when you exit Incognito mode.

What happens when you browse privately

Some information will not be seen or saved

Once you exit all your Incognito browsing windows, Chrome won't save:

- Your browsing history
- Your cookies and site data
- Information you entered in forms
- Permissions you give websites

To exit Incognito mode, close all Incognito windows.

Your activity might still be visible

Incognito mode stops Chrome from saving your browsing activity to your local history. Your activity, like your location, might still be visible to:

- Websites you visit, including the ads and resources used on those sites
- Websites you sign in to
- Your employer, school, or whoever runs the network you're using
- Your internet service provider
- Search engines
 - Search engines may show search suggestions based on your location or activity in your current Incognito browsing session.

Some of your info might still be visible

A web service, website, search engine, or provider may be able to see:

- Your IP address, which can be used to identify your general location
- Your activity when you use a web service
- Your identity if you sign in to a web service, like Gmail

You can still find and use your payment, password and contact info, but you can't change your saved info in a Chrome Incognito window.

Downloads and bookmarks are saved

Chrome won't store the files you download while browsing in private. But, they're still saved to your Downloads folder, even after you exit Incognito. You and anyone who uses your device can see and open the files.

All bookmarks you create are saved to Chrome.

Some of your preferences, including accessibility choices and bookmark settings, may also be saved to Chrome.

[Computer](#)
[Android](#)
[iPhone & iPad](#)

You can switch between Incognito windows and regular Chrome windows. You'll only browse in private when you're using an Incognito window.

Close Incognito mode to stop private browsing

Incognito mode runs in a separate window from your normal Chrome windows.

If you have an Incognito window open and you open another one, your private browsing session will continue in the new window. To exit Incognito mode, close all Incognito windows.

If you see a number next to the Incognito icon at the top right, you have more than one Incognito window open. To close an Incognito window:

- On your computer, go to your Incognito window.
- Close the window:
 - Windows or Chrome OS:** At the top right, click Close .
 - Mac:** At the top left, click Close .

Related articles

- [Browse in private](#)
- [Let others browse Chrome as a guest](#)
- [Clear Chrome browsing data](#)

Was this helpful?

Yes
No

Help

- [Browse in private](#)
- [How private browsing works in Chrome](#)
- [Choose your privacy settings](#)
- [Check if a site's connection is secure](#)
- [Manage warnings about unsafe sites](#)
- [Lock or erase your lost phone or computer](#)
- [Remove unwanted software & ads](#)
- [Share your location](#)
- [Start or stop automatically reporting errors & crashes](#)
- [Increase security with site isolation](#)
- [Choose which Google features you use in Chrome](#)
- [Check if your Chrome browser is managed](#)

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To get the latest tips, tricks, and how-to's, [subscribe to our YouTube Channel](#).

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English

[Send feedback about our Help Center](#)

APPENDIX I.2
CHROME
“LEARN MORE” PAGE
(ALTERNATIVE LANGUAGE)

How private browsing works in Chrome

When you browse privately, other people who use the device won't see your history.

Chrome doesn't save your browsing history or information entered in forms. Cookies and site data are remembered while you're browsing, but deleted when you exit Incognito mode.

What happens when you browse privately

Some information will not be seen or saved

Once you exit all your Incognito browsing windows, Chrome won't save:

- Your browsing history
- Your cookies and site data
- Information you entered in forms
- Permissions you give websites

To exit Incognito mode, close all Incognito windows.

Your activity might still be visible

Incognito mode stops Chrome from saving your browsing activity to your local history. Your activity, like your location, might still be visible to:

- Websites you visit, including the ads and resources used on those sites (such as Google Analytics, Adobe Analytics, Google Ad Manager, Facebook Ads)
- Websites you sign in to
- Your employer, school, or whoever runs the network you're using
- Your internet service provider
- Search engines
 - Search engines may show search suggestions based on your location or activity in your current Incognito browsing session.

Some of your info might still be visible

A web service (such as Google Analytics, Adobe Analytics, Google Ad Manager, Facebook Ads), website, search engine, or provider may be able to see:

- Your IP address, which can be used to identify your general location
- Your activity when you use a web service
- Your identity if you sign in to a web service, like Gmail

You can still find and use your payment, password and contact info, but you can't change your saved info in a Chrome Incognito window.

Downloads and bookmarks are saved

Chrome won't store the files you download while browsing in private. But, they're still saved to your Downloads folder, even after you exit Incognito. You and anyone who uses your device can see and open the files.

All bookmarks you create are saved to Chrome.

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Computer Android iPhone & iPad



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1. On your computer, go to your Incognito window.
2. Close the window:
 - Windows or Chrome OS: At the top right, click Close .
 - Mac: At the top left, click Close .

Related articles













- [Browse in private](#)
- [Let others browse Chrome as a guest](#)
- [Clear Chrome browsing data](#)

Was this helpful?

Yes

No

Help

-  [Browse in private](#)
-  [How private browsing works in Chrome](#)
-  [Choose your privacy settings](#)
-  [Check if a site's connection is secure](#)
-  [Manage warnings about unsafe sites](#)
-  [Lock or erase your lost phone or computer](#)
-  [Remove unwanted software & ads](#)
-  [Share your location](#)
-  [Start or stop automatically reporting errors & crashes](#)
-  [Increase security with site isolation](#)
-  [Choose which Google features you use in Chrome](#)
-  [Check if your Chrome browser is managed](#)



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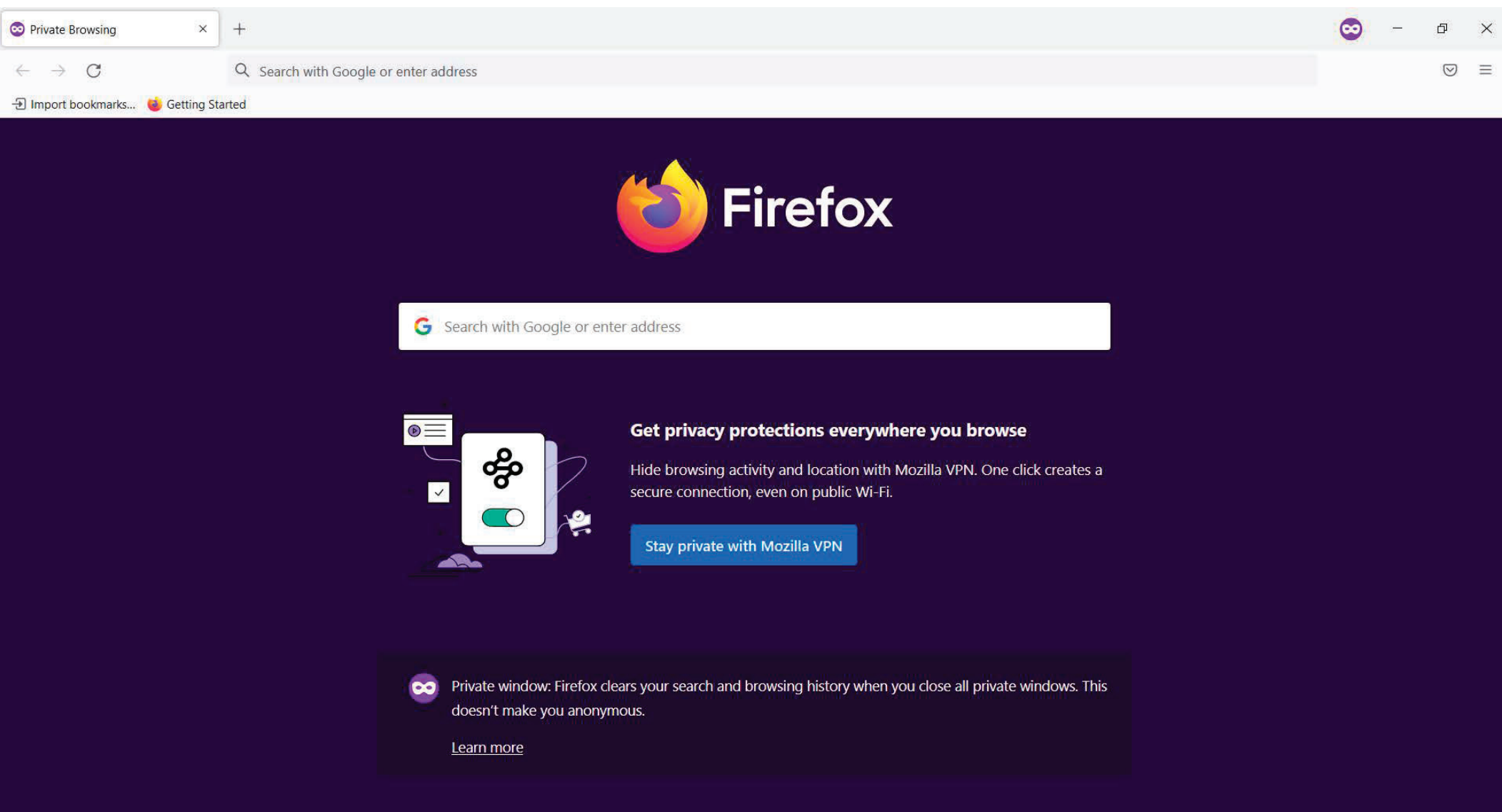


APPENDIX J

FIREFOX

PRIVATE BROWSING

SPLASH SCREEN



APPENDIX K
FIREFOX
“LEARN MORE” PAGE

[Get Help](#)[Volunteer](#)[Sign In/Up](#)[Home](#) / [Firefox](#) / [Protect your privacy](#) / [Common Myths about Private Browsing](#)

Find help...

[Download Firefox](#)[Systems and Languages](#) [What's New](#) [Privacy](#)

Common Myths about Private Browsing

Customize this article

☒ Firefox

Version 95

Windows 10

[Private Browsing](#) is a useful feature of Firefox, but only if you understand the protection it offers. It helps you obscure your online activity from other people who use Firefox on your computer, but does not make you invisible online.

Myth 1: Private Browsing makes you anonymous on the Internet.

Reality: Private Browsing does not mask your identity or activity online. Websites and Internet service providers can still gather information about your visit, even if you are not signed in. If you use your device at work, your company may be able to monitor the websites you visit. If you surf the Web at home, your cable company (or their partners) may have access to your browsing information. Only a [Virtual Private Network \(VPN\)](#) can mask your location and encrypt your online activity, keeping your identity and data safe from prying eyes. If you need to stay anonymous online, try [Mozilla VPN](#).

Myth 2: Private Browsing removes all traces of your browsing activity from your computer.

Reality: Private Browsing works by letting you browse without saving passwords, cookies and browsing history in a Private Window. If you download a file from a website, it will remain on your computer, but it will not appear in the download manager in Firefox. If you bookmark a website while in a Private Window, it will remain in your bookmark list.

Myth 3: Private Browsing doesn't display any browsing history.

Reality: Private Browsing will, by default, [display visited sites and bookmarks as you type in the address bar](#). Firefox saves these pages during normal browsing. If you don't want to see these suggestions, you can deselect them in your Firefox Settings [Privacy & Security](#) panel under Address Bar.

Address Bar

When using the address bar, suggest

- ☐ Browsing history
☐ Bookmarks
☐ Open tabs

Myth 4: Private Browsing will protect you from keystroke loggers and spyware.

Reality: Private Browsing does not protect you from malware installed on your computer. If you suspect you have malware, [take steps to remove it](#) to prevent it from happening again.

To learn more about how Firefox protects your privacy, see [Enhanced Tracking Protection in Firefox for desktop](#) and [SmartBlock for Enhanced Tracking Protection](#).

These fine people helped write this article:

[AliceWymann](#), [Michele Rodaro](#), [Joni](#), [Artist](#), [Jeff](#), [Erin S.](#), [Fabi](#), [Kalev](#), [Jeremy](#)



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Mozilla

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Firefox

[Download](#)
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Firefox for Developers

[Developer Edition](#)
[Beta](#)
[Beta for Android](#)
[Nightly](#)
[Nightly for Android](#)

Firefox Accounts

[Sign In/Up](#)
[Benefits](#)

Language

English



Firefox Private Network



[mozilla.org](#) [Terms of Service](#) [Privacy](#) [Cookies](#) [Contact](#)

Visit Mozilla Corporation's not-for-profit parent, the Mozilla Foundation.

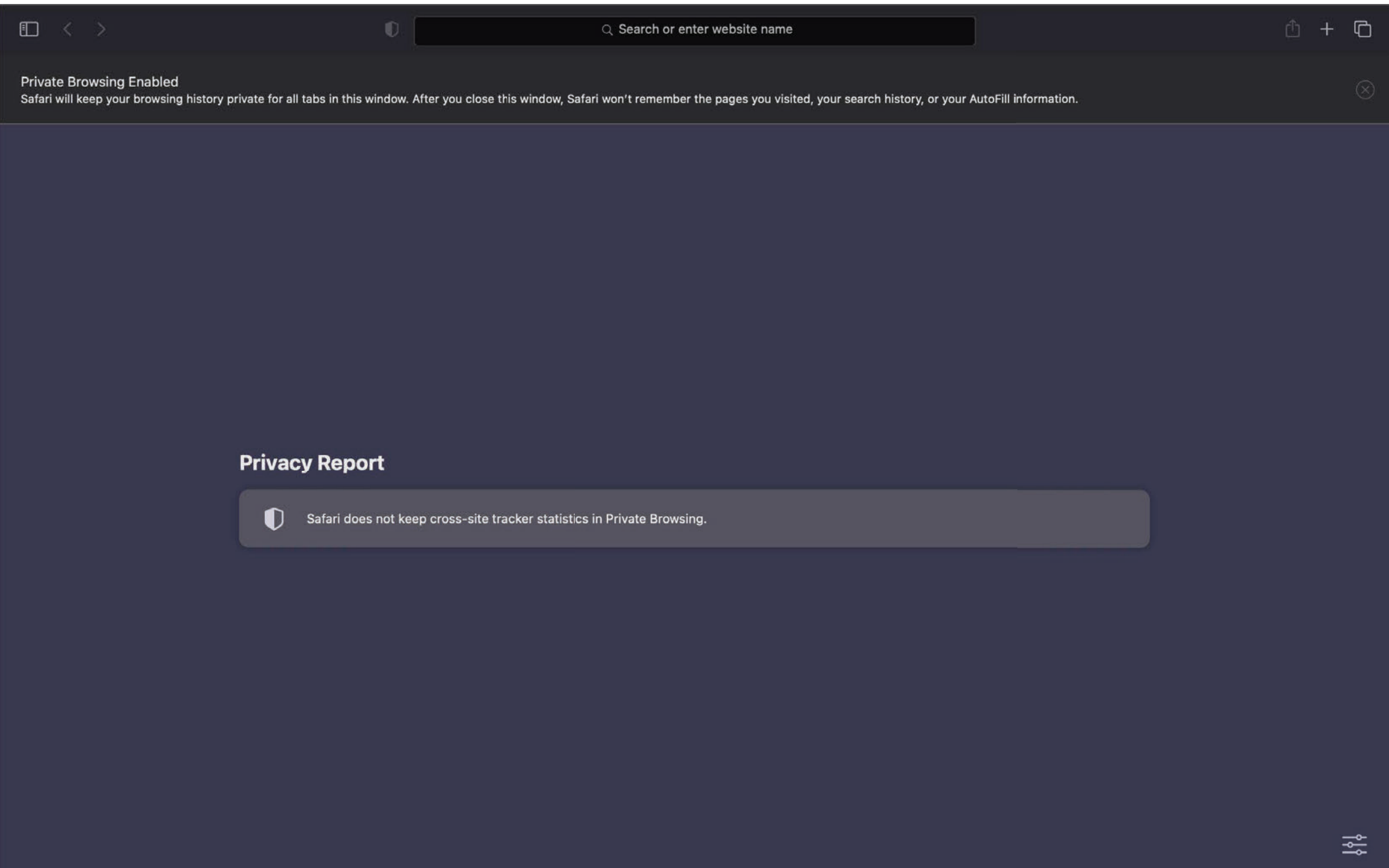
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APPENDIX L

SAFARI

PRIVATE BROWSING

SPLASH SCREEN



APPENDIX M.1

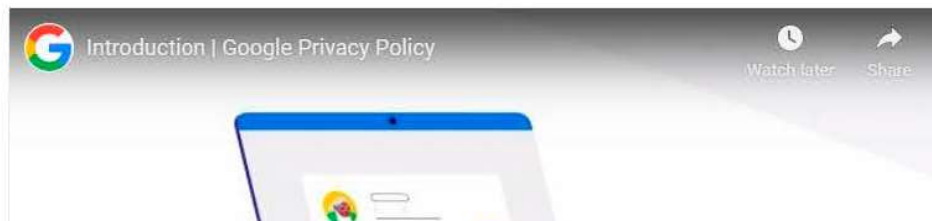
GOOGLE PRIVACY POLICY (UNHIGHLIGHTED)



GOOGLE PRIVACY POLICY

When you use our services, you're trusting us with your information. We understand this is a big responsibility and work hard to protect your information and put you in control.

This Privacy Policy is meant to help you understand what information we collect, why we collect it, and how you can update, manage, export, and delete your information.



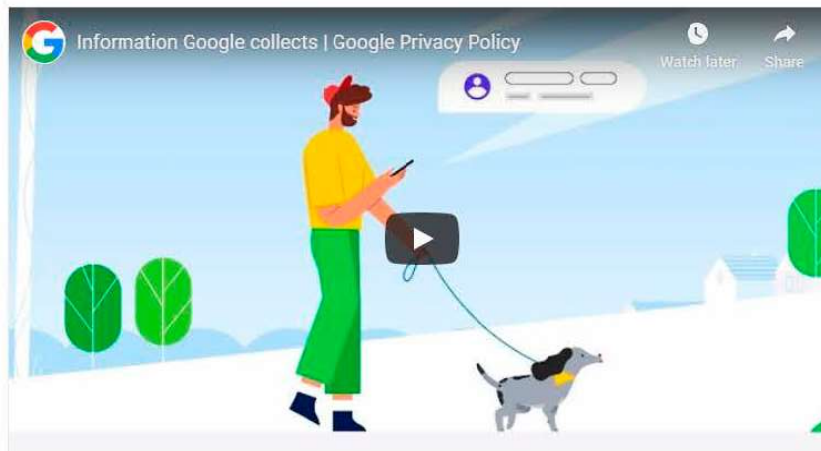


We build a range of services that help millions of people daily to explore and interact with the world in new ways. Our services include:

- Google apps, sites, and devices, like Search, YouTube, and Google Home
- Platforms like the Chrome browser and Android operating system
- Products that are integrated into third-party apps and sites, like ads and embedded Google Maps

You can use our services in a variety of ways to manage your privacy. For example, you can sign up for a Google Account if you want to create and manage content like emails and photos, or see more relevant search results. And you can use many Google services when you're signed out or without creating an account at all, like searching on Google or watching YouTube videos. You can also choose to browse the web privately using Chrome in Incognito mode. And across our services, you can adjust your privacy settings to control what we collect and how your information is used.

To help explain things as clearly as possible, we've added examples, explanatory videos, and definitions for [key terms](#). And if you have any questions about this Privacy Policy, you can [contact us](#).



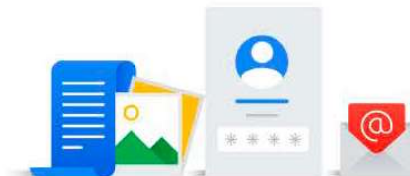
INFORMATION GOOGLE COLLECTS

We want you to understand the types of information we collect as you use our services

We collect information to provide better services to all our users — from figuring out basic stuff like which language you speak, to more complex things like which ads you'll find most useful, the people who matter most to you online, or which YouTube videos you might like. The information Google collects, and how that information is used, depends on how you use our services and how you manage your privacy controls.

When you're not signed in to a Google Account, we store the information we collect with unique identifiers tied to the browser, application, or device you're using. This helps us do things like maintain your language preferences across browsing sessions.

When you're signed in, we also collect information that we store with your Google Account, which we treat as personal information.

Things you create or provide to us

When you create a Google Account, you provide us with personal information that includes your name and a password. You can also choose to add a phone number or payment information to your account. Even if you aren't signed in to a Google Account, you might choose to provide us with information — like an email address to receive updates about our services.

We also collect the content you create, upload, or receive from others when using our services. This includes things like email you write and receive, photos and videos you save, docs and spreadsheets you create, and comments you make on YouTube videos.

Information we collect as you use our services

Your apps, browsers & devices



We collect information about the apps, browsers, and devices you use to access Google services, which helps us provide features like automatic product updates and dimming your screen if your battery runs low.

The information we collect includes unique identifiers, browser type and settings, device type and settings, operating system, mobile network information including carrier name and phone number, and application version number. We also collect information about the interaction of your apps, browsers, and devices with our services, including IP address, crash reports, system activity, and the date, time, and referrer URL of your request.

We collect this information when a Google service on your device contacts our servers – for example, when you install an app from the Play Store or when a service checks for automatic updates. If you're using an Android device with Google apps, your device periodically contacts Google servers to provide information about your device and connection to our services. This information includes things like your device type, carrier name, crash reports, and which apps you've installed.

Your activity



We collect information about your activity in our services, which we use to do things like recommend a YouTube video you might like. The activity information we collect may include:

- Terms you search for
- Videos you watch
- Views and interactions with content and ads
- Voice and audio information when you use audio features
- Purchase activity
- People with whom you communicate or share content

- Activity on third-party sites and apps that use our services
- [Chrome browsing history you've synced with your Google Account](#)

If you use our services to make and receive calls or send and receive messages, we may collect telephony log information like your phone number, calling-party number, receiving-party number, forwarding numbers, time and date of calls and messages, duration of calls, routing information, and types of calls.

You can visit your [Google Account](#) to find and manage activity information that's saved in your account.



[Go to Google Account](#)

Your location information



We collect information about your location when you use our services, which helps us offer features like driving directions for your weekend getaway or showtimes for movies playing near you.

Your location can be determined with varying degrees of accuracy by:

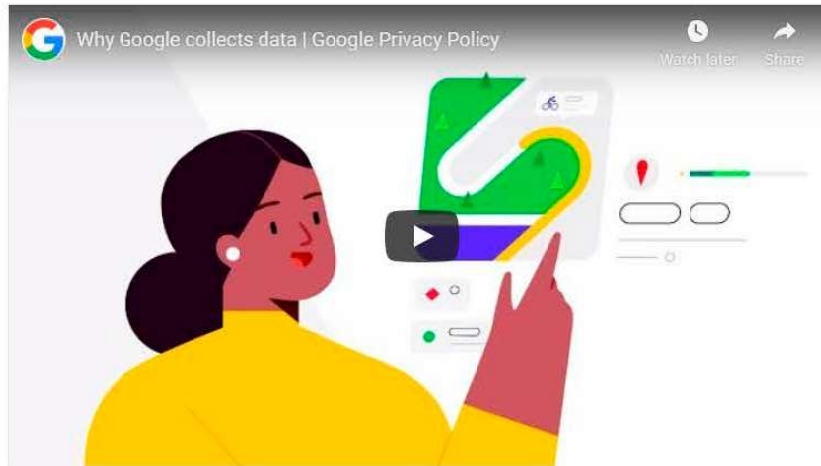
- GPS
- [IP address](#)
- [Sensor data from your device](#)
- [Information about things near your device](#), such as Wi-Fi access points, cell towers, and Bluetooth-enabled devices

The types of location data we collect depend in part on your device and account settings. For example, you can [turn your Android device's location on or off](#) [using the device's settings app](#). You can also turn on [Location History](#) [if you want to create a private map of where you go with your signed-in devices](#).

In some circumstances, Google also collects information about you from publicly accessible sources. For example, if your name appears in your local newspaper, Google's Search engine may index that article and display it to other people if they search for your name. We may also collect information about you from trusted partners, including marketing partners who provide us with information about potential customers of our business services, and security

marketing partners who provide us with information about potential customers of our business services, and security partners who provide us with information to protect against abuse. We also receive information from advertisers to provide [advertising and research services on their behalf](#).

We use various technologies to collect and store information, including [cookies](#), [pixel tags](#), local storage, such as [browser web storage](#) or [application data caches](#), databases, and [server logs](#).

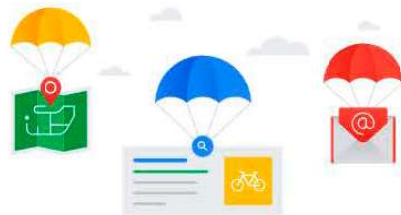


WHY GOOGLE COLLECTS DATA

We use data to build better services

We use the information we collect from all our services for the following purposes:

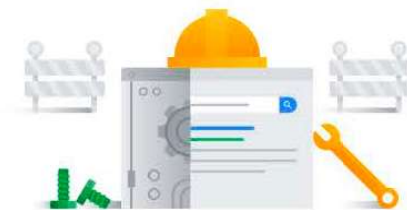
Provide our services



We use your information to [deliver our services](#), like processing the terms you search for in order to return results or

We use your information to deliver our services, like processing the terms you search for in order to return results or helping you share content by suggesting recipients from your contacts.

Maintain & improve our services



We also use your information to ensure our services are working as intended, such as tracking outages or troubleshooting issues that you report to us. And we use your information to make improvements to our services — for example, understanding which search terms are most frequently misspelled helps us improve spell-check features used across our services.

Develop new services



We use the information we collect in existing services to help us develop new ones. For example, understanding how people organized their photos in Picasa, Google's first photos app, helped us design and launch Google Photos.

Provide personalized services, including content and ads



We use the information we collect to customize our services for you, including providing recommendations, personalized content, and [customized search results](#). For example, [Security Checkup](#) provides security tips adapted to how you use Google products. And Google Play uses information like apps you've already installed and videos you've watched on YouTube to suggest new apps you might like.

Depending on your settings, we may also show you [personalized ads](#) based on your interests. For example, if you search for "mountain bikes," you may see an ad for sports equipment when you're browsing a site that shows ads served by Google. You can control what information we use to show you ads by visiting your ad settings.

- We don't show you personalized ads based on [sensitive categories](#), such as race, religion, sexual orientation, or health.
- We don't share information that personally identifies you with advertisers, such as your name or email, unless you ask us to. For example, if you see an ad for a nearby flower shop and select the "tap to call" button, we'll connect your call and may share your phone number with the flower shop.



[Go to Ad Settings](#)

Measure performance



We use data for analytics and measurement to understand how our services are used. For example, we analyze data about your visits to our sites to do things like optimize product design. And we also use data about the ads you interact with to help advertisers understand the performance of their ad campaigns. We use a variety of tools to do this, including Google Analytics. When you visit sites that use Google Analytics, Google and a Google Analytics customer [may link information](#) about your activity from that site with activity from other sites that use our ad services.

Communicate with you





We use information we collect, like your email address, to interact with you directly. For example, we may send you a notification if we detect suspicious activity, like an attempt to sign in to your Google Account from an unusual location. Or we may let you know about upcoming changes or improvements to our services. And if you contact Google, we'll keep a record of your request in order to help solve any issues you might be facing.

Protect Google, our users, and the public



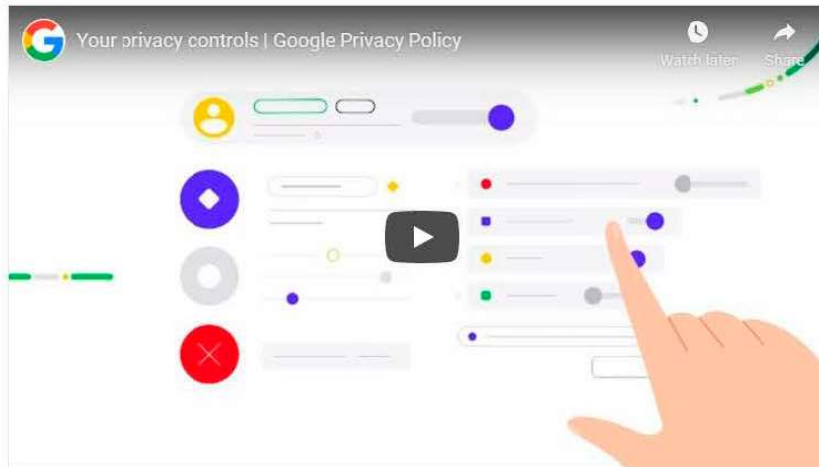
We use information to help improve the safety and reliability of our services. This includes detecting, preventing, and responding to fraud, abuse, security risks, and technical issues that could harm Google, our users, or the public.

We use different technologies to process your information for these purposes. We use automated systems that analyze your content to provide you with things like customized search results, personalized ads, or other features tailored to how you use our services. And we analyze your content to help us detect abuse such as spam, malware, and illegal content. We also use algorithms to recognize patterns in data. For example, Google Translate helps people communicate across languages by detecting common language patterns in phrases you ask it to translate.

We may combine the information we collect among our services and across your devices for the purposes described above. For example, if you watch videos of guitar players on YouTube, you might see an ad for guitar lessons on a site that uses our ad products. Depending on your account settings, [your activity on other sites and apps](#) may be associated with your personal information in order to improve Google's services and the ads delivered by Google.

If other users already have your email address or other information that identifies you, we may show them your publicly visible Google Account information, such as your name and photo. This helps people identify an email coming from you, for example.

We'll ask for your consent before using your information for a purpose that isn't covered in this Privacy Policy.



YOUR PRIVACY CONTROLS

You have choices regarding the information we collect and how it's used

This section describes key controls for managing your privacy across our services. You can also visit the [Privacy Checkup](#), which provides an opportunity to review and adjust important privacy settings. In addition to these tools, we also offer specific privacy settings in our products — you can learn more in our [Product Privacy Guide](#).



[Go to Privacy Checkup](#)

Managing, reviewing, and updating your information

When you're signed in, you can always review and update information by visiting the services you use. For example, Photos and Drive are both designed to help you manage specific types of content you've saved with Google.

We also built a place for you to review and control information saved in your Google Account. Your [Google Account](#) includes:

Privacy controls



Activity Controls

Decide what types of activity you'd like saved in your account. For example, you can turn on Location History if you want traffic predictions for your daily commute, or you can save your YouTube Watch History to get better video suggestions.

[Go to Activity Controls](#)

**Ad settings**

Manage your preferences about the ads shown to you on Google and on sites and apps that partner with Google to show ads. You can modify your interests, choose whether your personal information is used to make ads more relevant to you, and turn on or off certain advertising services.

[Go to Ad Settings](#)**About you**

Control what others see about you across Google services.

[Go to About You](#)**Shared endorsements**

Choose whether your name and photo appear next to your activity, like reviews and recommendations, that appear in ads.

[Go to Shared Endorsements](#)**Information you share**

If you're a G Suite user, control whom you share information with through your account on Google+.

[Go to Information You Share](#)**Ways to review & update your information****My Activity**

My Activity allows you to review and control data that's created when you use Google services, like searches you've done or your visits to Google Play. You can browse by date and by topic, and delete part or all of your activity.

[Go to My Activity](#)**Google Dashboard**

Google Dashboard allows you to manage information associated with specific products.

[Go to Dashboard](#)**Your personal information**

Manage your contact information, such as your name, email, and phone number.

[Go to Personal Info](#)

When you're signed out, you can manage information associated with your browser or device, including:

- Signed-out search personalization: [Choose](#) whether your search activity is used to offer you more relevant results and recommendations.
- YouTube settings: Pause and delete your [YouTube Search History](#) and your [YouTube Watch History](#).
- Ad Settings: [Manage](#) your preferences about the ads shown to you on Google and on sites and apps that partner with Google to show ads.

Exporting, removing & deleting your information

You can export a copy of content in your Google Account if you want to back it up or use it with a service outside of Google.



[Export your data](#)

You can also [request to remove content](#) from specific Google services based on applicable law.

To delete your information, you can:

- Delete your content from [specific Google services](#)
- Search for and then delete specific items from your account using [My Activity](#)
- [Delete specific Google products](#), including your information associated with those products
- [Delete your entire Google Account](#)



[Delete your information](#)

And finally, [Inactive Account Manager](#) allows you to give someone else access to parts of your Google Account in case you're unexpectedly unable to use your account.

There are other ways to control the information Google collects whether or not you're signed in to a Google Account, including:

- Browser settings: For example, you can configure your browser to indicate when Google has set a [cookie](#) in your browser. You can also configure your browser to block all cookies from a specific domain or all domains. But remember that our services [rely on cookies to function properly](#), for things like remembering your language preferences.
- Device-level settings: Your device may have controls that determine what information we collect. For example, you can [modify location settings](#) on your Android device.



SHARING YOUR INFORMATION

When you share your information

Many of our services let you share information with other people, and you have control over how you share. For example, you can share videos on YouTube publicly or you can decide to keep your videos private. Remember, when you share information publicly, your content may become accessible through search engines, including Google Search.

When you're signed in and interact with some Google services, like leaving comments on a YouTube video or reviewing an app in Play, your name and photo appear next to your activity. We may also display this information in [ads depending on your Shared endorsements setting](#).

When Google shares your information

We do not share your personal information with companies, organizations, or individuals outside of Google except in the following cases:

With your consent

We'll share personal information outside of Google when we have your consent. For example, if you [use Google Home to make a reservation](#) through a booking service, we'll get your permission before sharing your name or phone number with the restaurant. We'll ask for your explicit consent to share any [sensitive personal information](#).

With domain administrators

If you're a student or work for an organization that uses Google services (like G Suite), your [domain administrator](#) and resellers who manage your account will have access to your Google Account. They may be able to:

- Access and retain information stored in your account, like your email
- View statistics regarding your account, like how many apps you install
- Change your account password
- Suspend or terminate your account access

- Suspend or terminate your account access
- Receive your account information in order to satisfy applicable law, regulation, legal process, or enforceable governmental request
- Restrict your ability to delete or edit your information or your privacy settings

For external processing

We provide personal information to our affiliates and other trusted businesses or persons to process it for us, based on our instructions and in compliance with our Privacy Policy and any other appropriate confidentiality and security measures. For example, we use service providers to help us with customer support.

For legal reasons

We will share personal information outside of Google if we have a good-faith belief that access, use, preservation, or disclosure of the information is reasonably necessary to:

- Meet any applicable law, regulation, legal process, or enforceable governmental request. We share information about the number and type of requests we receive from governments in our [Transparency Report](#).
- Enforce applicable Terms of Service, including investigation of potential violations.
- Detect, prevent, or otherwise address fraud, security, or technical issues.
- Protect against harm to the rights, property or safety of Google, our users, or the public as required or permitted by law.

We may share non-personally identifiable information publicly and with our partners — like publishers, advertisers, developers, or rights holders. For example, we share information publicly to [show trends](#) about the general use of our services. We also allow specific partners to collect information from your browser or device for advertising and measurement purposes using their own cookies or similar technologies.

If Google is involved in a merger, acquisition, or sale of assets, we'll continue to ensure the confidentiality of your personal information and give affected users notice before personal information is transferred or becomes subject to a different privacy policy.



KEEPING YOUR INFORMATION SECURE

We build security into our services to protect your information

All Google products are built with strong security features that continuously protect your information. The insights we gain from maintaining our services help us detect and automatically block security threats from ever reaching you. And if we do detect something risky that we think you should know about, we'll notify you and help guide you through steps to stay better protected.

We work hard to protect you and Google from unauthorized access, alteration, disclosure, or destruction of information we hold, including:

- We use encryption to keep your data private while in transit
- We offer a range of security features, like [Safe Browsing](#), Security Checkup, and [2 Step Verification](#) to help you protect your account
- We review our information collection, storage, and processing practices, including physical security measures, to prevent unauthorized access to our systems
- We restrict access to personal information to Google employees, contractors, and agents who need that information in order to process it. Anyone with this access is subject to strict contractual confidentiality obligations and may be disciplined or terminated if they fail to meet these obligations.



EXPORTING & DELETING YOUR INFORMATION

You can export a copy of your information or delete it from your Google Account at any time

You can export a copy of content in your Google Account if you want to back it up or use it with a service outside of Google.

[Export your data](#)

To delete your information, you can:

- Delete your content from [specific Google services](#)
- Search for and then delete specific items from your account using [My Activity](#)
- [Delete specific Google products](#), including your information associated with those products
- [Delete your entire Google Account](#)



[Delete your information](#)

RETAINING YOUR INFORMATION

We retain the data we collect for different periods of time depending on what it is, how we use it, and how you configure your settings:

- Some data you can delete whenever you like, such as the content you create or upload. You can also delete [activity information](#) saved in your account, or [choose to have it deleted automatically](#) after a set period of time.
- Other data is deleted or anonymized automatically after a set period of time, such as [advertising data](#) in server logs.
- We keep some data until you delete your Google Account, such as information about how often you use our services.
- And some data we retain for longer periods of time when necessary for legitimate business or legal purposes, such as security, fraud and abuse prevention, or financial record-keeping.

When you delete data, we follow a deletion process to make sure that your data is safely and completely removed from our servers or retained only in anonymized form. We try to ensure that our services protect information from accidental or malicious deletion. Because of this, there may be delays between when you delete something and when copies are deleted from our active and backup systems.

You can read more about Google's [data retention periods](#), including how long it takes us to delete your information.



COMPLIANCE & COOPERATION WITH REGULATORS

We regularly review this Privacy Policy and make sure that we process your information in ways that comply with it.

Data transfers

We maintain servers around the world and your information may be processed on servers located outside of the country where you live. Data protection laws vary among countries, with some providing more protection than others. Regardless of where your information is processed, we apply the same protections described in this policy. We also comply with certain [legal frameworks](#) relating to the transfer of data, such as the EU-U.S. and Swiss-U.S. Privacy Shield Frameworks.

When we receive formal written complaints, we respond by contacting the person who made the complaint. We work with the appropriate regulatory authorities, including local data protection authorities, to resolve any complaints regarding the transfer of your data that we cannot resolve with you directly.

California requirements

If the California Consumer Privacy Act (CCPA) applies to your information, we provide these disclosures and the [tools](#) described in this policy so you can exercise your rights to receive information about our data practices, as well as to request access to and deletion of your information. These tools allow you to review, update and delete your information, as well as export and download a copy of it. You can also [read more](#) about Google's data retention periods, and the process we follow to delete your information.

Google does not sell your personal information. We only [share your information](#) as described in this policy. Google [processes your information](#) for the purposes described in this policy, which include "business purposes" under the CCPA. These purposes include:

- **Protecting against security threats, abuse, and illegal activity.** Google uses and may disclose information to detect, prevent and respond to security incidents, and for protecting against other malicious, deceptive, fraudulent, or illegal activity. For example, to protect our services, Google may receive or disclose information about IP addresses that malicious actors have compromised.
- **Auditing and measurement.** Google uses information for analytics and measurement to understand how our services are used, as well as to fulfill obligations to our partners like publishers, advertisers, developers, or rights holders. We may disclose non-personally identifiable information publicly and with these partners, including for auditing purposes.
- **Maintaining our services.** Google uses information to ensure our services are working as intended, such as tracking outages or troubleshooting bugs and other issues that you report to us.

- **Research and development.** Google uses information to improve our services and to develop new products, features and technologies that benefit our users and the public. For example, we use publicly available information to help train Google's language models and build features like Google Translate.
- **Use of service providers.** Google shares information with service providers to perform services on our behalf, in compliance with our Privacy Policy and other appropriate confidentiality and security measures. For example, we may rely on service providers to help provide customer support.
- **Advertising.** Google processes information, including online identifiers and information about your interactions with advertisements, to provide advertising. This keeps many of our services freely available for users. You can control what information we use to show you ads by visiting your [ad settings](#).

Google also uses information to satisfy applicable laws or regulations, and discloses information in response to legal process or enforceable government requests, including to law enforcement. We provide information about the number and type of requests we receive from governments in our [Transparency Report](#).

If you have additional questions or requests related to your rights under the CCPA, [you can contact Google](#).

ABOUT THIS POLICY

When this policy applies

This Privacy Policy applies to all of the services offered by Google LLC and its affiliates, including YouTube, Android, and services offered on third-party sites, such as advertising services. This Privacy Policy doesn't apply to services that have separate privacy policies that do not incorporate this Privacy Policy.

This Privacy Policy doesn't apply to:

- The information practices of other companies and organizations that advertise our services
- Services offered by other companies or individuals, including products or sites that may include Google services, be displayed to you in search results, or be linked from our services

Changes to this policy

We change this Privacy Policy from time to time. We will not reduce your rights under this Privacy Policy without your explicit consent. We always indicate the date the last changes were published and we offer access to [archived versions](#) for your review. If changes are significant, we'll provide a more prominent notice (including, for certain services, email notification of Privacy Policy changes).

RELATED PRIVACY PRACTICES

Specific Google services

The following privacy notices provide additional information about some Google services:

- [Chrome & the Chrome Operating System](#)
- [Play Books](#)
- [Payments](#)
- [Fiber](#)
- [Google Fi](#)
- [G Suite for Education](#)
- [YouTube Kids](#)
- [Google Accounts Managed with Family Link, for Children under 13 \(or applicable age in your country\)](#)
- [Voice and Audio Collection from Children's Features on the Google Assistant](#) [↗](#)

Other useful resources

The following links highlight useful resources for you to learn more about our practices and privacy settings.

- [Your Google Account](#) [↗](#) is home to many of the settings you can use to manage your account
- [Privacy Checkup](#) [↗](#) guides you through key privacy settings for your Google Account
- [Google's safety center](#) [↗](#) helps you learn more about our built-in security, privacy controls, and tools to help set digital ground rules for your family online
- [Privacy & Terms](#) provides more context regarding this Privacy Policy and our Terms of Service
- [Technologies](#) includes more information about:
 - [How Google uses cookies](#)
 - Technologies used for [Advertising](#)
 - [How Google uses pattern recognition](#) to recognize things like faces in photos
 - [How Google uses information from sites or apps that use our services](#)

Key terms

Affiliates

An affiliate is an entity that belongs to the Google group of companies, including the following companies that provide consumer services in the EU: Google Ireland Limited, Google Commerce Ltd, Google Payment Corp, and Google Dialer Inc. Learn more about the [companies providing business services in the EU](#).

Algorithm

A process or set of rules followed by a computer in performing problem-solving operations.

Application data cache

An application data cache is a data repository on a device. It can, for example, enable a web application to run without an internet connection and improve the performance of the application by enabling faster loading of content.

Browser web storage

Browser web storage enables websites to store data in a browser on a device. When used in "local storage" mode, it enables data to be stored across sessions. This makes data retrievable even after a browser has been closed and reopened. One technology that facilitates web storage is HTML 5.

Cookies

A cookie is a small file containing a string of characters that is sent to your computer when you visit a website. When you visit the site again, the cookie allows that site to recognize your browser. Cookies may store user preferences and other information. You can configure your browser to refuse all cookies or to indicate when a cookie is being sent. However, some website features or services may not function properly without cookies. Learn more about [how Google uses cookies](#) and how Google uses data, including cookies, [when you use our partners' sites or apps](#).

Device

A device is a computer that can be used to access Google services. For example, desktop computers, tablets, smart speakers, and smartphones are all considered devices.

Google Account

You may access some of our services by signing up for a [Google Account](#) and providing us with some personal information (typically your name, email address, and a password). This account information is used to authenticate you when you access Google services and protect your account from unauthorized access by others. You can edit or delete your account at any time through your Google Account settings.

IP address

Every device connected to the Internet is assigned a number known as an Internet protocol (IP) address. These numbers are usually assigned in geographic blocks. An IP address can often be used to identify the location from which a device is connecting to the Internet.

Non-personally identifiable information

This is information that is recorded about users so that it no longer reflects or references an individually-identifiable user.

Personal information

This is information that you provide to us which personally identifies you, such as your name, email address, or billing information, or other data that can be reasonably linked to such information by Google, such as information we associate with your Google Account.

Pixel tag

A pixel tag is a type of technology placed on a website or within the body of an email for the purpose of tracking certain activity, such as views of a website or when an email is opened. Pixel tags are often used in combination with cookies.

Referrer URL

A Referrer URL (Uniform Resource Locator) is information transmitted to a destination webpage by a web browser, typically when you click a link to that page. The Referrer URL contains the URL of the last webpage the browser visited.

Sensitive personal information

This is a particular category of personal information relating to topics such as confidential medical facts, racial or ethnic origins, political or religious beliefs, or sexuality.

Server logs

Like most websites, our servers automatically record the page requests made when you visit our sites. These "server logs" typically include your web request, Internet Protocol address, browser type, browser language, the date and time of your request, and one or more cookies that may uniquely identify your browser.

A typical log entry for a search for "cars" looks like this:

```
123.45.67.89 - 25/Mar/2008 10:15:32 -  
http://www.google.com/search?q=cars -  
Firefox 1.0.7; Windows NT 5.1 -  
740674ce2123e569
```

- 123.45.67.89 is the Internet Protocol address assigned to the user by the user's ISP. Depending on the user's service, a different address may be assigned to the user by their service provider each time they connect to the Internet.

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- `25/Mar/2003 10:15:32` is the date and time of the query.
- `http://www.google.com/search?q=cars` is the requested URL, including the search query.
- `Firefox 1.0.7; Windows NT 5.1` is the browser and operating system being used.
- `740674ce2123a969` is the unique cookie ID assigned to this particular computer the first time it visited Google. (Cookies can be deleted by users. If the user has deleted the cookie from the computer since the last time they've visited Google, then it will be the unique cookie ID assigned to their device the next time they visit Google from that particular device).

Unique identifiers

A unique identifier is a string of characters that can be used to uniquely identify a browser, app, or device. Different identifiers vary in how permanent they are, whether they can be reset by users, and how they can be accessed.

Unique identifiers can be used for various purposes, including security and fraud detection, syncing services such as your email inbox, remembering your preferences, and providing personalized advertising. For example, unique identifiers stored in cookies help sites display content in your browser in your preferred language. You can configure your browser to refuse all cookies or to indicate when a cookie is being sent. [Learn more about how Google uses cookies.](#)

On other platforms besides browsers, unique identifiers are used to recognize a specific device or app on that device. For example, a unique identifier such as the Advertising ID is used to provide relevant advertising on Android devices, and can be [managed](#) in your device's settings. Unique identifiers may also be incorporated into a device by its manufacturer (sometimes called a universally unique ID or UUID), such as the IMEI-number of a mobile phone. For example, a device's unique identifier can be used to customize our service to your device or analyze device issues related to our services.

ads you'll find most useful

For example, if you watch videos about baking on YouTube, you may see more ads that relate to baking as you browse the web. We also may use your IP address to determine your approximate location, so that we can serve you ads for a nearby pizza delivery service if you search for "pizza." [Learn more about Google ads](#) and [why you may see particular ads](#).

advertising and research services on their behalf

For example, advertisers may upload data from their loyalty-card programs so that they can better understand the performance of their ad campaigns. We only provide aggregated reports to advertisers that don't reveal information about individual people.

Android device with Google apps

Android devices with Google apps include devices sold by Google or one of our partners and include phones, cameras, vehicles, wearables, and televisions. These devices use Google Play Services and other pre-installed apps that include services like Gmail, Maps, your phone's camera and phone dialer, text-to-speech conversion, keyboard input, and security features.

combine the information we collect

Some examples of how we combine the information we collect include:

- When you're signed in to your Google Account and search on Google, you can see search results from the public web, along with relevant information from the content you have in other Google products, like Gmail or Google Calendar. This can include things like the status of your upcoming flights, restaurant, and hotel reservations, or your photos. [Learn more](#)
- If you have communicated with someone via Gmail and want to add them to a Google Doc or an event in Google Calendar, Google makes it easy to do so by autocompleting their email address when you start to type in their name. This feature makes it easier to share things with people you know. [Learn more](#)
- The Google app can use data that you have stored in other Google products to show you personalized content, depending on your settings. For example, if you have searches stored in your Web & App Activity, the Google app can show you news articles and other information about your interests, like sports scores, based on your activity. [Learn more](#)
- If you link your Google Account to your Google Home, you can manage your information and get things done through the Google Assistant. For example, you can add events to your Google Calendar or get your schedule for the day, ask for status updates on your upcoming flight, or send information like driving directions to your phone. [Learn more](#)

customized search results

For example, when you're signed in to your Google Account and have the Web & App Activity control enabled, you can get more relevant search results that are based on your previous searches and activity from other Google services. You can [learn more here](#). You may also get customized search results even when you're signed out. If you don't want this level of search customization, you can [search and browse privately](#) or [turn off signed-out search personalization](#).

deliver our services

Examples of how we use your information to deliver our services include:

- We use the IP address assigned to your device to send you the data you requested, such as loading a YouTube video
- We use unique identifiers stored in cookies on your device to help us authenticate you as the person who should have access to your Google Account
- Photos and videos you upload to Google Photos are used to help you create albums, animations and other creations that you can share. [Learn more](#)
- A flight confirmation email you receive may be used to create a "check-in" button that appears in your Gmail
- When you purchase services or physical goods from us, you may provide us information like your shipping address or delivery instructions. We use this information for things like processing, fulfilling, and delivering your order, and to provide support in connection with the product or service you purchase.

detect abuse

When we detect spam, malware, illegal content, and other forms of abuse on our systems in violation of our policies, we may disable your account or take other appropriate action. In certain circumstances, we may also report the violation to appropriate authorities.

devices

For example, we can use information from your devices to help you decide which device you'd like to use to install an app or view a movie you buy from Google Play. We also use this information to help protect your account.

ensure and improve

For example, we analyze how people interact with advertising to improve the performance of our ads.

ensure our services are working as intended

For example, we continuously monitor our systems to look for problems. And if we find something wrong with a specific feature, reviewing activity information collected before the problem started allows us to fix things more quickly.

Information about things near your device

If you use Google's Location services on Android, we can improve the performance of apps that rely on your location, like Google Maps. If you use Google's Location services, your device sends information to Google about its location, sensors (like accelerometer), and nearby cell towers and Wi-Fi access points (like MAC address and signal strength). All these things help to determine your location. You can use your device settings to enable Google Location services. [Learn more](#)

legal process, or enforceable governmental request

Like other technology and communications companies, Google regularly receives requests from governments and courts around the world to disclose user data. Respect for the privacy and security of data you store with Google underpins our approach to complying with these legal requests. Our legal team reviews each and every request, regardless of type, and we frequently push back when a request appears to be overly broad or doesn't follow the correct process. Learn more in our [Transparency Report](#).

make improvements

For example, we use cookies to analyze how people interact with our services. And that analysis can help us build better products. For example, it may help us discover that it's taking people too long to complete a certain task or that they have trouble finishing steps at all. We can then redesign that feature and improve the product for everyone.

may link information

Google Analytics relies on first-party cookies, which means the cookies are set by the Google Analytics customer. Using our systems, data generated through Google Analytics can be linked by the Google Analytics customer and by Google to third-party cookies that are related to visits to other websites. For example, an advertiser may want to use its Google Analytics data to create more relevant ads, or to further analyze its traffic. [Learn more](#)

partner with Google

There are over 2 million non-Google websites and apps that partner with Google to show ads. [Learn more](#)

payment information

For example, if you add a credit card or other payment method to your Google Account, you can use it to buy things across our services, like apps in the Play Store. We may also ask for other information, like a business tax ID, to help process your payment. In some cases, we may also need to verify your identity and may ask you for information to do this.

We may also use payment information to verify that you meet age requirements, if, for example, you enter an incorrect birthday indicating you're not old enough to have a Google Account. [Learn more](#)

personalized ads

You may also see personalized ads based on information from the advertiser. If you shopped on an advertiser's website, for example, they can use that visit information to show you ads. [Learn more](#)

phone number

If you add your phone number to your account, it can be used for different purposes across Google services, depending on your settings. For example, your phone number can be used to help you access your account if you forget your password, help people find and connect with you, and make the ads you see more relevant to you. [Learn more](#)

protect against abuse

For example, information about security threats can help us notify you if we think your account has been compromised (at which point we can help you take steps to protect your account).

publicly accessible sources

For example, we may collect information that's publicly available online or from other public sources to help train Google's language models and build features like Google Translate.

rely on cookies to function properly

For example, we use a cookie called 'lbc' that makes it possible for you to open many Google Docs in one browser. Blocking this cookie would prevent Google Docs from working as expected. [Learn more](#)

safety and reliability

Some examples of how we use your information to help keep our services safe and reliable include:

- Collecting and analyzing IP addresses and cookie data to protect against automated abuse. This abuse takes many forms, such as sending spam to Gmail users, stealing money from advertisers by fraudulently clicking on ads, or

forms, such as sending spam to Gmail users, stealing money from advertisers by fraudulently clicking on ads, or censoring content by launching a Distributed Denial of Service (DDoS) attack.

- The "last account activity" feature in Gmail can help you find out if and when someone accessed your email without your knowledge. This feature shows you information about recent activity in Gmail, such as the IP addresses that accessed your mail, the associated location, and the date and time of access. [Learn more](#)

sensitive categories

When showing you personalized ads, we use topics that we think might be of interest to you based on your activity. For example, you may see ads for things like "Cooking and Recipes" or "Air Travel." We don't use topics or show personalized ads based on sensitive categories like race, religion, sexual orientation, or health. And we [require the same from advertisers that use our services](#).

Sensor data from your device

Your device may have sensors that can be used to better understand your location and movement. For example, an accelerometer can be used to determine your speed and a gyroscope to figure out your direction of travel.

servers around the world

For example, we operate data centers located [around the world](#) to help keep our products continuously available for users.

services to make and receive calls or send and receive messages

Examples of these services include:

- Google Hangouts, for making domestic and international calls
- Google Voice, for making calls, sending text messages, and managing voicemail
- Google Fi, for a phone plan

show trends

When lots of people start searching for something, it can provide useful information about particular trends at that time. Google Trends samples Google web searches to estimate the popularity of searches over a certain period of time and shares those results publicly in aggregated terms. [Learn more](#)

specific Google services

For example, you can delete [your blog](#) from Blogger or a [Google Site you own](#) from Google Sites. You can also delete [reviews](#) you've left on apps, games, and other content in the Play Store.

specific partners

For example, we allow YouTube creators and advertisers to work with measurement companies to learn about the audience of their YouTube videos or ads, using cookies or similar technologies. Another example is merchants on our shopping pages, who use cookies to understand how many different people see their product listings. [Learn more](#) about these partners and how they use your information.

synced with your Google Account

Your Chrome browsing history is only saved to your account if you've enabled Chrome synchronization with your Google Account. [Learn more](#)

the people who matter most to you online

For example, when you type an address in the To, Cc, or Bcc field of an email you're composing, Gmail will suggest addresses based on the people you [contact most frequently](#).

third parties

For example, we process your information to report use statistics to rights holders about how their content was used in our services. We may also process your information if people search for your name and we display search results for sites containing publicly available information about you.

Views and interactions with content and ads

For example, we collect information about views and interactions with ads so we can provide aggregated reports to advertisers, like telling them whether we served their ad on a page and whether the ad was likely seen by a viewer. We may also measure [other](#) interactions, such as how you move your mouse over an ad or if you interact with the page on which the ad appears.

your activity on other sites and apps

This activity might come from your use of Google services, like from syncing your account with Chrome or your visits to sites and apps that partner with Google. Many websites and apps partner with Google to improve their content and services. For example, a website might use our advertising services (like AdSense) or analytics tools (like Google Analytics), or it might embed other content (such as videos from YouTube). These services may share information about your activity with Google and, depending on your [account settings](#) and the products in use (for instance, when a partner uses Google Analytics in conjunction with our advertising services), this data may be associated with your personal information.

[Learn more](#) about how Google uses data when you use our partners' sites or apps.

APPENDIX M.2

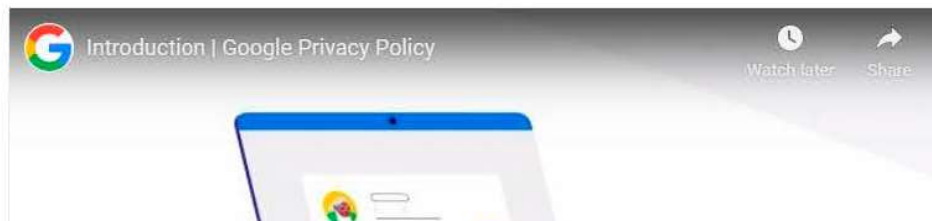
GOOGLE PRIVACY POLICY (HIGHLIGHTED)



GOOGLE PRIVACY POLICY

When you use our services, you're trusting us with your information. We understand this is a big responsibility and work hard to protect your information and put you in control.

This Privacy Policy is meant to help you understand what information we collect, why we collect it, and how you can update, manage, export, and delete your information.



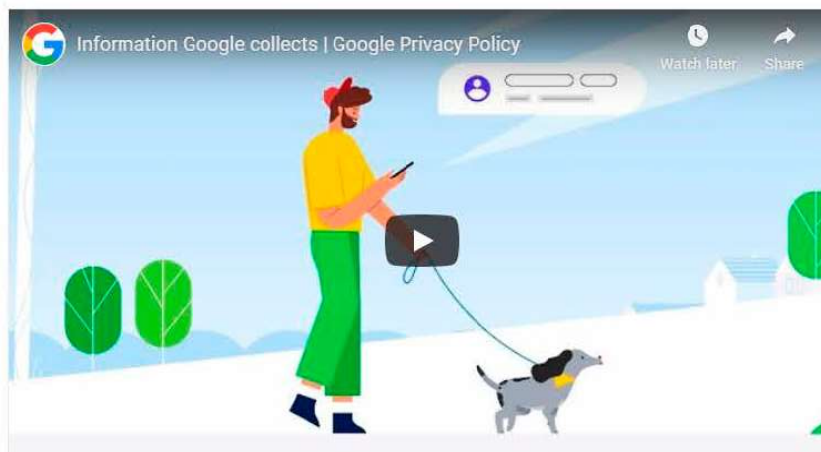


We build a range of services that help millions of people daily to explore and interact with the world in new ways. Our services include:

- Google apps, sites, and devices, like Search, YouTube, and Google Home
- Platforms like the Chrome browser and Android operating system
- Products that are integrated into third-party apps and sites, like ads and embedded Google Maps

You can use our services in a variety of ways to manage your privacy. For example, you can sign up for a Google Account if you want to create and manage content like emails and photos, or see more relevant search results. And you can use many Google services when you're signed out or without creating an account at all, like searching on Google or watching YouTube videos. You can also choose to browse the web privately using Chrome in Incognito mode. And across our services, you can adjust your privacy settings to control what we collect and how your information is used.

To help explain things as clearly as possible, we've added examples, explanatory videos, and definitions for [key terms](#). And if you have any questions about this Privacy Policy, you can [contact us](#).



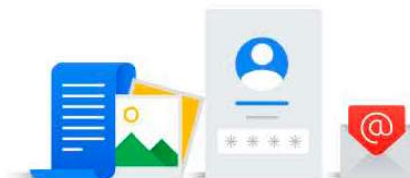
INFORMATION GOOGLE COLLECTS

We want you to understand the types of information we collect as you use our services

We collect information to provide better services to all our users – from figuring out basic stuff like which language you speak, to more complex things like which ads you'll find most useful, the people who matter most to you online, or which YouTube videos you might like. The information Google collects, and how that information is used, depends on how you use our services and how you manage your privacy controls.

When you're not signed in to a Google Account, we store the information we collect with unique identifiers tied to the browser, application, or device you're using. This helps us do things like maintain your language preferences across browsing sessions.

When you're signed in, we also collect information that we store with your Google Account, which we treat as personal information.

Things you create or provide to us

When you create a Google Account, you provide us with personal information that includes your name and a password. You can also choose to add a phone number or payment information to your account. Even if you aren't signed in to a Google Account, you might choose to provide us with information – like an email address to receive updates about our services.

We also collect the content you create, upload, or receive from others when using our services. This includes things like email you write and receive, photos and videos you save, docs and spreadsheets you create, and comments you make on YouTube videos.

Information we collect as you use our services

Your apps, browsers & devices



We collect information about the apps, browsers, and devices you use to access Google services, which helps us provide features like automatic product updates and dimming your screen if your battery runs low.

The information we collect includes unique identifiers, browser type and settings, device type and settings, operating system, mobile network information including carrier name and phone number, and application version number. We also collect information about the interaction of your apps, browsers, and devices with our services, including IP address, crash reports, system activity, and the date, time, and referrer URL of your request.

We collect this information when a Google service on your device contacts our servers – for example, when you install an app from the Play Store or when a service checks for automatic updates. If you're using an Android device with Google apps, your device periodically contacts Google servers to provide information about your device and connection to our services. This information includes things like your device type, carrier name, crash reports, and which apps you've installed.

Your activity



We collect information about your activity in our services, which we use to do things like recommend a YouTube video you might like. The activity information we collect may include:

- Terms you search for
- Videos you watch
- Views and interactions with content and ads
- Voice and audio information when you use audio features
- Purchase activity
- People with whom you communicate or share content

- [Activity on third-party sites and apps that use our services](#)
- [Chrome browsing history you've synced with your Google Account](#)

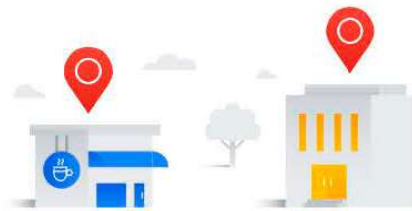
If you use our services to make and receive calls or send and receive messages, we may collect telephony log information like your phone number, calling-party number, receiving-party number, forwarding numbers, time and date of calls and messages, duration of calls, routing information, and types of calls.

You can visit your [Google Account](#) to find and manage activity information that's saved in your account.



[Go to Google Account](#)

Your location information



We collect information about your location when you use our services, which helps us offer features like driving directions for your weekend getaway or showtimes for movies playing near you.

Your location can be determined with varying degrees of accuracy by:

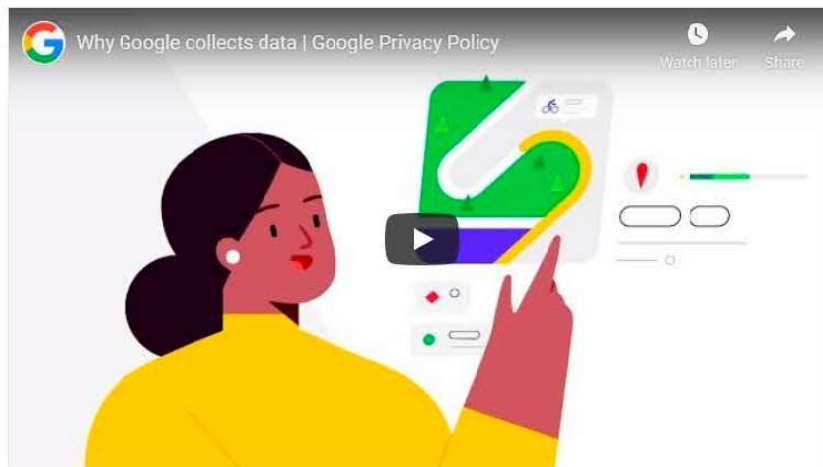
- GPS
- [IP address](#)
- [Sensor data from your device](#)
- [Information about things near your device](#), such as Wi-Fi access points, cell towers, and Bluetooth-enabled devices

The types of location data we collect depend in part on your device and account settings. For example, you can [turn your Android device's location on or off](#) [using the device's settings app](#). You can also turn on [Location History](#) [if you want to create a private map of where you go with your signed-in devices](#).

In some circumstances, Google also collects information about you from publicly accessible sources. For example, if your name appears in your local newspaper, Google's Search engine may index that article and display it to other people if they search for your name. We may also collect information about you from trusted partners, including marketing partners who provide us with information about potential customers of our business services, and security

marketing partners who provide us with information about potential customers of our business services, and security partners who provide us with information to protect against abuse. We also receive information from advertisers to provide advertising and research services on their behalf.

We use various technologies to collect and store information, including cookies, pixel tags, local storage, such as browser web storage or application data caches, databases, and server logs.

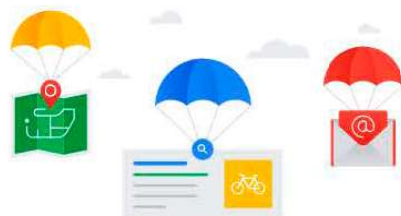


WHY GOOGLE COLLECTS DATA

We use data to build better services

We use the information we collect from all our services for the following purposes:

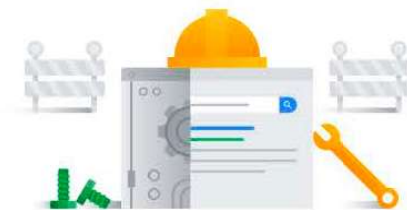
Provide our services



We use your information to deliver our services, like processing the terms you search for in order to return results or

We use your information to deliver our services, like processing the terms you search for in order to return results or helping you share content by suggesting recipients from your contacts.

Maintain & improve our services



We also use your information to ensure our services are working as intended, such as tracking outages or troubleshooting issues that you report to us. And we use your information to make improvements to our services — for example, understanding which search terms are most frequently misspelled helps us improve spell-check features used across our services.

Develop new services



We use the information we collect in existing services to help us develop new ones. For example, understanding how people organized their photos in Picasa, Google's first photos app, helped us design and launch Google Photos.

Provide personalized services, including content and ads



We use the information we collect to customize our services for you, including providing recommendations, personalized content, and customized search results. For example, [Security Checkup](#) provides security tips adapted to how you use Google products. And Google Play uses information like apps you've already installed and videos you've watched on YouTube to suggest new apps you might like.

Depending on your settings, we may also show you personalized ads based on your interests. For example, if you search for "mountain bikes," you may see an ad for sports equipment when you're browsing a site that shows ads served by Google. You can control what information we use to show you ads by visiting your ad settings.

- We don't show you personalized ads based on sensitive categories, such as race, religion, sexual orientation, or health.
- We don't share information that personally identifies you with advertisers, such as your name or email, unless you ask us to. For example, if you see an ad for a nearby flower shop and select the "tap to call" button, we'll connect your call and may share your phone number with the flower shop.



[Go to Ad Settings](#)

Measure performance



We use data for analytics and measurement to understand how our services are used. For example, we analyze data about your visits to our sites to do things like optimize product design. And we also use data about the ads you interact with to help advertisers understand the performance of their ad campaigns. We use a variety of tools to do this, including Google Analytics. When you visit sites that use Google Analytics, Google and a Google Analytics customer may link information about your activity from that site with activity from other sites that use our ad services.

Communicate with you





We use information we collect, like your email address, to interact with you directly. For example, we may send you a notification if we detect suspicious activity, like an attempt to sign in to your Google Account from an unusual location. Or we may let you know about upcoming changes or improvements to our services. And if you contact Google, we'll keep a record of your request in order to help solve any issues you might be facing.

Protect Google, our users, and the public



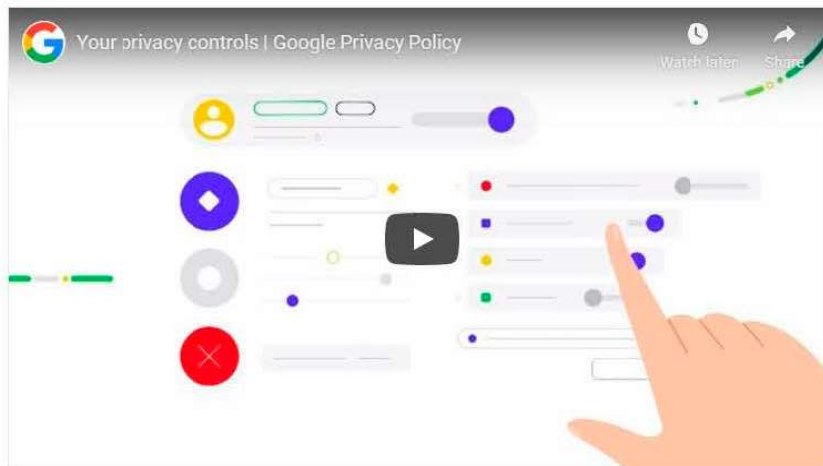
We use information to help improve the safety and reliability of our services. This includes detecting, preventing, and responding to fraud, abuse, security risks, and technical issues that could harm Google, our users, or the public.

We use different technologies to process your information for these purposes. We use automated systems that analyze your content to provide you with things like customized search results, personalized ads, or other features tailored to how you use our services. And we analyze your content to help us detect abuse such as spam, malware, and illegal content. We also use algorithms to recognize patterns in data. For example, Google Translate helps people communicate across languages by detecting common language patterns in phrases you ask it to translate.

We may combine the information we collect among our services and across your devices for the purposes described above. For example, if you watch videos of guitar players on YouTube, you might see an ad for guitar lessons on a site that uses our ad products. Depending on your account settings, [your activity on other sites and apps](#) may be associated with your personal information in order to improve Google's services and the ads delivered by Google.

If other users already have your email address or other information that identifies you, we may show them your publicly visible Google Account information, such as your name and photo. This helps people identify an email coming from you, for example.

We'll ask for your consent before using your information for a purpose that isn't covered in this Privacy Policy.



YOUR PRIVACY CONTROLS

You have choices regarding the information we collect and how it's used

This section describes key controls for managing your privacy across our services. You can also visit the [Privacy Checkup](#), which provides an opportunity to review and adjust important privacy settings. In addition to these tools, we also offer specific privacy settings in our products – you can learn more in our [Product Privacy Guide](#).



[Go to Privacy Checkup](#)

Managing, reviewing, and updating your information

When you're signed in, you can always review and update information by visiting the services you use. For example, Photos and Drive are both designed to help you manage specific types of content you've saved with Google.

We also built a place for you to review and control information saved in your Google Account. Your [Google Account](#) includes:

Privacy controls



Activity Controls

Decide what types of activity you'd like saved in your account. For example, you can turn on Location History if you want traffic predictions for your daily commute, or you can save your YouTube Watch History to get better video suggestions.

[Go to Activity Controls](#)

**Ad settings**

Manage your preferences about the ads shown to you on Google and on sites and apps that partner with Google to show ads. You can modify your interests, choose whether your personal information is used to make ads more relevant to you, and turn on or off certain advertising services.

[Go to Ad Settings](#)**About you**

Control what others see about you across Google services.

[Go to About You](#)**Shared endorsements**

Choose whether your name and photo appear next to your activity, like reviews and recommendations, that appear in ads.

[Go to Shared Endorsements](#)**Information you share**

If you're a G Suite user, control whom you share information with through your account on Google+.

[Go to Information You Share](#)**Ways to review & update your information****My Activity**

My Activity allows you to review and control data that's created when you use Google services, like searches you've done or your visits to Google Play. You can browse by date and by topic, and delete part or all of your activity.

[Go to My Activity](#)**Google Dashboard**

Google Dashboard allows you to manage information associated with specific products.

[Go to Dashboard](#)**Your personal information**

Manage your contact information, such as your name, email, and phone number.

[Go to Personal Info](#)

When you're signed out, you can manage information associated with your browser or device, including:

- Signed-out search personalization: Choose [whether](#) your search activity is used to offer you more relevant results and recommendations.
- YouTube settings: Pause and delete your [YouTube Search History](#) and your [YouTube Watch History](#).
- Ad Settings: [Manage](#) your preferences about the ads shown to you on Google and on sites and apps that partner with Google to show ads.

Exporting, removing & deleting your information

You can export a copy of content in your Google Account if you want to back it up or use it with a service outside of Google.



Export your data

You can also [request to remove content](#) from specific Google services based on applicable law.

To delete your information, you can:

- Delete your content from [specific Google services](#)
- Search for and then delete specific items from your account using [My Activity](#)
- [Delete specific Google products](#), including your information associated with those products
- [Delete your entire Google Account](#)



Delete your information

And finally, [Inactive Account Manager](#) allows you to give someone else access to parts of your Google Account in case you're unexpectedly unable to use your account.

There are other ways to control the information Google collects whether or not you're signed in to a Google Account, including:

- Browser settings: For example, you can configure your browser to indicate when Google has set a cookie in your browser. You can also configure your browser to block all cookies from a specific domain or all domains. But remember that our services [rely on cookies to function properly](#), for things like remembering your language preferences.
- Device-level settings: Your device may have controls that determine what information we collect. For example, you can [modify location settings](#) on your Android device.



SHARING YOUR INFORMATION

When you share your information

Many of our services let you share information with other people, and you have control over how you share. For example, you can share videos on YouTube publicly or you can decide to keep your videos private. Remember, when you share information publicly, your content may become accessible through search engines, including Google Search.

When you're signed in and interact with some Google services, like leaving comments on a YouTube video or reviewing an app in Play, your name and photo appear next to your activity. We may also display this information in [ads depending on your Shared endorsements setting](#).

When Google shares your information

We do not share your personal information with companies, organizations, or individuals outside of Google except in the following cases:

With your consent

We'll share personal information outside of Google when we have your consent. For example, if you [use Google Home to make a reservation](#) through a booking service, we'll get your permission before sharing your name or phone number with the restaurant. We'll ask for your explicit consent to share any [sensitive personal information](#).

With domain administrators

If you're a student or work for an organization that uses Google services (like G Suite), your [domain administrator](#) and resellers who manage your account will have access to your Google Account. They may be able to:

- Access and retain information stored in your account, like your email
- View statistics regarding your account, like how many apps you install
- Change your account password
- Suspend or terminate your account access

- Suspend or terminate your account access
- Receive your account information in order to satisfy applicable law, regulation, legal process, or enforceable governmental request
- Restrict your ability to delete or edit your information or your privacy settings

For external processing

We provide personal information to our affiliates and other trusted businesses or persons to process it for us, based on our instructions and in compliance with our Privacy Policy and any other appropriate confidentiality and security measures. For example, we use service providers to help us with customer support.

For legal reasons

We will share personal information outside of Google if we have a good-faith belief that access, use, preservation, or disclosure of the information is reasonably necessary to:

- Meet any applicable law, regulation, legal process, or enforceable governmental request. We share information about the number and type of requests we receive from governments in our [Transparency Report](#).
- Enforce applicable Terms of Service, including investigation of potential violations.
- Detect, prevent, or otherwise address fraud, security, or technical issues.
- Protect against harm to the rights, property or safety of Google, our users, or the public as required or permitted by law.

We may share non-personally identifiable information publicly and with our partners — like publishers, advertisers, developers, or rights holders. For example, we share information publicly to [show trends](#) about the general use of our services. We also allow specific partners to collect information from your browser or device for advertising and measurement purposes using their own cookies or similar technologies.

If Google is involved in a merger, acquisition, or sale of assets, we'll continue to ensure the confidentiality of your personal information and give affected users notice before personal information is transferred or becomes subject to a different privacy policy.



KEEPING YOUR INFORMATION SECURE

We build security into our services to protect your information

All Google products are built with strong security features that continuously protect your information. The insights we gain from maintaining our services help us detect and automatically block security threats from ever reaching you. And if we do detect something risky that we think you should know about, we'll notify you and help guide you through steps to stay better protected.

We work hard to protect you and Google from unauthorized access, alteration, disclosure, or destruction of information we hold, including:

- We use encryption to keep your data private while in transit
- We offer a range of security features, like [Safe Browsing](#), Security Checkup, and [2 Step Verification](#) to help you protect your account
- We review our information collection, storage, and processing practices, including physical security measures, to prevent unauthorized access to our systems
- We restrict access to personal information to Google employees, contractors, and agents who need that information in order to process it. Anyone with this access is subject to strict contractual confidentiality obligations and may be disciplined or terminated if they fail to meet these obligations.



EXPORTING & DELETING YOUR INFORMATION

You can export a copy of your information or delete it from your Google Account at any time

You can export a copy of content in your Google Account if you want to back it up or use it with a service outside of Google.

[Export your data](#)

To delete your information, you can:

- Delete your content from [specific Google services](#)
- Search for and then delete specific items from your account using [My Activity](#)
- [Delete specific Google products](#), including your information associated with those products
- [Delete your entire Google Account](#)



[Delete your information](#)

RETAINING YOUR INFORMATION

We retain the data we collect for different periods of time depending on what it is, how we use it, and how you configure your settings:

- Some data you can delete whenever you like, such as the content you create or upload. You can also delete [activity information](#) saved in your account, or [choose to have it deleted automatically](#) after a set period of time.
- Other data is deleted or anonymized automatically after a set period of time, such as [advertising data](#) in server logs.
- We keep some data until you delete your Google Account, such as information about how often you use our services.
- And some data we retain for longer periods of time when necessary for legitimate business or legal purposes, such as security, fraud and abuse prevention, or financial record-keeping.

When you delete data, we follow a deletion process to make sure that your data is safely and completely removed from our servers or retained only in anonymized form. We try to ensure that our services protect information from accidental or malicious deletion. Because of this, there may be delays between when you delete something and when copies are deleted from our active and backup systems.

You can read more about Google's [data retention periods](#), including how long it takes us to delete your information.



COMPLIANCE & COOPERATION WITH REGULATORS

We regularly review this Privacy Policy and make sure that we process your information in ways that comply with it.

Data transfers

We maintain servers around the world and your information may be processed on servers located outside of the country where you live. Data protection laws vary among countries, with some providing more protection than others. Regardless of where your information is processed, we apply the same protections described in this policy. We also comply with certain [legal frameworks](#) relating to the transfer of data, such as the EU-U.S. and Swiss-U.S. Privacy Shield Frameworks.

When we receive formal written complaints, we respond by contacting the person who made the complaint. We work with the appropriate regulatory authorities, including local data protection authorities, to resolve any complaints regarding the transfer of your data that we cannot resolve with you directly.

California requirements

If the California Consumer Privacy Act (CCPA) applies to your information, we provide these disclosures and the [tools](#) described in this policy so you can exercise your rights to receive information about our data practices, as well as to request access to and deletion of your information. These tools allow you to review, update and delete your information, as well as export and download a copy of it. You can also [read more](#) about Google's data retention periods, and the process we follow to delete your information.

Google does not sell your personal information. We only [share your information](#) as described in this policy. Google [processes your information](#) for the purposes described in this policy, which include "business purposes" under the CCPA. These purposes include:

- **Protecting against security threats, abuse, and illegal activity.** Google uses and may disclose information to detect, prevent and respond to security incidents, and for protecting against other malicious, deceptive, fraudulent, or illegal activity. For example, to protect our services, Google may receive or disclose information about IP addresses that malicious actors have compromised.
- **Auditing and measurement.** Google uses information for analytics and measurement to understand how our services are used, as well as to fulfill obligations to our partners like publishers, advertisers, developers, or rights holders. We may disclose non-personally identifiable information publicly and with these partners, including for auditing purposes.
- **Maintaining our services.** Google uses information to ensure our services are working as intended, such as tracking outages or troubleshooting bugs and other issues that you report to us.

- **Research and development.** Google uses information to improve our services and to develop new products, features and technologies that benefit our users and the public. For example, we use publicly available information to help train Google's language models and build features like Google Translate.
- **Use of service providers.** Google shares information with service providers to perform services on our behalf, in compliance with our Privacy Policy and other appropriate confidentiality and security measures. For example, we may rely on service providers to help provide customer support.
- **Advertising.** Google processes information, including online identifiers and information about your interactions with advertisements, to provide advertising. This keeps many of our services freely available for users. You can control what information we use to show you ads by visiting your [ad settings](#).

Google also uses information to satisfy applicable laws or regulations, and discloses information in response to legal process or enforceable government requests, including to law enforcement. We provide information about the number and type of requests we receive from governments in our [Transparency Report](#).

If you have additional questions or requests related to your rights under the CCPA, [you can contact Google](#).

ABOUT THIS POLICY

When this policy applies

This Privacy Policy applies to all of the services offered by Google LLC and its affiliates, including YouTube, Android, and services offered on third-party sites, such as advertising services. This Privacy Policy doesn't apply to services that have separate privacy policies that do not incorporate this Privacy Policy.

This Privacy Policy doesn't apply to:

- The information practices of other companies and organizations that advertise our services
- Services offered by other companies or individuals, including products or sites that may include Google services, be displayed to you in search results, or be linked from our services

Changes to this policy

We change this Privacy Policy from time to time. We will not reduce your rights under this Privacy Policy without your explicit consent. We always indicate the date the last changes were published and we offer access to [archived versions](#) for your review. If changes are significant, we'll provide a more prominent notice (including, for certain services, email notification of Privacy Policy changes).

RELATED PRIVACY PRACTICES

Specific Google services

The following privacy notices provide additional information about some Google services:

- [Chrome & the Chrome Operating System](#)
- [Play Books](#)
- [Payments](#)
- [Fiber](#)
- [Google Fi](#)
- [G Suite for Education](#)
- [YouTube Kids](#)
- [Google Accounts Managed with Family Link, for Children under 13 \(or applicable age in your country\)](#)
- [Voice and Audio Collection from Children's Features on the Google Assistant](#)

Other useful resources

The following links highlight useful resources for you to learn more about our practices and privacy settings.

- [Your Google Account](#) is home to many of the settings you can use to manage your account
- [Privacy Checkup](#) guides you through key privacy settings for your Google Account
- [Google's safety center](#) helps you learn more about our built-in security, privacy controls, and tools to help set digital ground rules for your family online
- [Privacy & Terms](#) provides more context regarding this Privacy Policy and our Terms of Service
- [Technologies](#) includes more information about:
 - [How Google uses cookies](#)
 - [Technologies used for Advertising](#)
 - [How Google uses pattern recognition](#) to recognize things like faces in photos
 - [How Google uses information from sites or apps that use our services](#)

Affiliates

An affiliate is an entity that belongs to the Google group of companies, including the following companies that provide consumer services in the EU: Google Ireland Limited, Google Commerce Ltd, Google Payment Corp, and Google Dialer Inc. Learn more about the [companies providing business services in the EU](#).

Algorithm

A process or set of rules followed by a computer in performing problem-solving operations.

Application data cache

An application data cache is a data repository on a device. It can, for example, enable a web application to run without an internet connection and improve the performance of the application by enabling faster loading of content.

Browser web storage

Browser web storage enables websites to store data in a browser on a device. When used in "local storage" mode, it enables data to be stored across sessions. This makes data retrievable even after a browser has been closed and reopened. One technology that facilitates web storage is HTML 5.

Cookies

A cookie is a small file containing a string of characters that is sent to your computer when you visit a website. When you visit the site again, the cookie allows that site to recognize your browser. Cookies may store user preferences and other information. You can configure your browser to refuse all cookies or to indicate when a cookie is being sent. However, some website features or services may not function properly without cookies. Learn more about how Google uses cookies and how Google uses data, including cookies, when you use our [partners' sites or apps](#).

Device

A device is a computer that can be used to access Google services. For example, desktop computers, tablets, smart speakers, and smartphones are all considered devices.

Google Account

You may access some of our services by signing up for a [Google Account](#) and providing us with some personal information (typically your name, email address, and a password). This account information is used to authenticate you when you access Google services and protect your account from unauthorized access by others. You can edit or delete your account at any time through your Google Account settings.

IP address

Every device connected to the Internet is assigned a number known as an Internet protocol (IP) address. These numbers are usually assigned in geographic blocks. An IP address can often be used to identify the location from which a device is connecting to the Internet.

Non-personally identifiable information

This is information that is recorded about users so that it no longer reflects or references an individually-identifiable user.

Personal information

This is information that you provide to us which personally identifies you, such as your name, email address, or billing information, or other data that can be reasonably linked to such information by Google, such as information we associate with your Google Account.

Pixel tag

A pixel tag is a type of technology placed on a website or within the body of an email for the purpose of tracking certain activity, such as views of a website or when an email is opened. Pixel tags are often used in combination with cookies.

Referrer URL

A Referrer URL (Uniform Resource Locator) is information transmitted to a destination webpage by a web browser, typically when you click a link to that page. The Referrer URL contains the URL of the last webpage the browser visited.

Sensitive personal information

This is a particular category of personal information relating to topics such as confidential medical facts, racial or ethnic origins, political or religious beliefs, or sexuality.

Server logs

Like most websites, our servers automatically record the page requests made when you visit our sites. These "server logs" typically include your web request, Internet Protocol address, browser type, browser language, the date and time of your request, and one or more cookies that may uniquely identify your browser.

A typical log entry for a search for "cars" looks like this:

```
123.45.67.89 - 25/Mar/2008 10:15:32 -  
http://www.google.com/search?q=cars -  
Firefox 1.0.7; Windows NT 5.1 -  
740674ce2123e569
```

- 123.45.67.89 is the Internet Protocol address assigned to the user by the user's ISP. Depending on the user's service, a different address may be assigned to the user by their service provider each time they connect to the Internet.

CONFIDENTIAL - SUBJECT TO PROTECTIVE ORDER

- 25/Mar/2003 10:15:32 is the date and time of the query.
- http://www.google.com/search?q=cars is the requested URL, including the search query.
- Firefox 1.0.7; Windows NT 5.1 is the browser and operating system being used.
- 740674ce2123a969 is the unique cookie ID assigned to this particular computer the first time it visited Google. (Cookies can be deleted by users. If the user has deleted the cookie from the computer since the last time they've visited Google, then it will be the unique cookie ID assigned to their device the next time they visit Google from that particular device).

Unique identifiers

A unique identifier is a string of characters that can be used to uniquely identify a browser, app, or device. Different identifiers vary in how permanent they are, whether they can be reset by users, and how they can be accessed.

Unique identifiers can be used for various purposes, including security and fraud detection, syncing services such as your email inbox, remembering your preferences, and providing personalized advertising. For example, unique identifiers stored in cookies help sites display content in your browser in your preferred language. You can configure your browser to refuse all cookies or to indicate when a cookie is being sent. [Learn more about how Google uses cookies.](#)

On other platforms besides browsers, unique identifiers are used to recognize a specific device or app on that device. For example, a unique identifier such as the Advertising ID is used to provide relevant advertising on Android devices, and can be managed in your device's settings. Unique identifiers may also be incorporated into a device by its manufacturer (sometimes called a universally unique ID or UUID), such as the IMEI-number of a mobile phone. For example, a device's unique identifier can be used to customize our service to your device or analyze device issues related to our services.

ads you'll find most useful

For example, if you watch videos about baking on YouTube, you may see more ads that relate to baking as you browse the web. We also may use your IP address to determine your approximate location, so that we can serve you ads for a nearby pizza delivery service if you search for "pizza." [Learn more about Google ads and why you may see particular ads.](#)

advertising and research services on their behalf

For example, advertisers may upload data from their loyalty-card programs so that they can better understand the performance of their ad campaigns. We only provide aggregated reports to advertisers that don't reveal information about individual people.

Android device with Google apps

Android devices with Google apps include devices sold by Google or one of our partners and include phones, cameras, vehicles, wearables, and televisions. These devices use Google Play Services and other pre-installed apps that include services like Gmail, Maps, your phone's camera and phone dialer, text-to-speech conversion, keyboard input, and security features.

combine the information we collect

Some examples of how we combine the information we collect include:

- When you're signed in to your Google Account and search on Google, you can see search results from the public web, along with relevant information from the content you have in other Google products, like Gmail or Google Calendar. This can include things like the status of your upcoming flights, restaurant, and hotel reservations, or your photos. [Learn more](#)
- If you have communicated with someone via Gmail and want to add them to a Google Doc or an event in Google Calendar, Google makes it easy to do so by autocompleting their email address when you start to type in their name. This feature makes it easier to share things with people you know. [Learn more](#)
- The Google app can use data that you have stored in other Google products to show you personalized content, depending on your settings. For example, if you have searches stored in your Web & App Activity, the Google app can show you news articles and other information about your interests, like sports scores, based on your activity. [Learn more](#)
- If you link your Google Account to your Google Home, you can manage your information and get things done through the Google Assistant. For example, you can add events to your Google Calendar or get your schedule for the day, ask for status updates on your upcoming flight, or send information like driving directions to your phone. [Learn more](#)

customized search results

For example, when you're signed in to your Google Account and have the Web & App Activity control enabled, you can get more relevant search results that are based on your previous searches and activity from other Google services. You can [learn more here](#). You may also get customized search results even when you're signed out. If you don't want this level of search customization, you can [search and browse privately](#) or [turn off signed-out search personalization](#).

deliver our services

Examples of how we use your information to deliver our services include:

- We use the IP address assigned to your device to send you the data you requested, such as loading a YouTube video
- We use unique identifiers stored in cookies on your device to help us authenticate you as the person who should have access to your Google Account
- Photos and videos you upload to Google Photos are used to help you create albums, animations and other creations that you can share. [Learn more](#)
- A flight confirmation email you receive may be used to create a "check-in" button that appears in your Gmail
- When you purchase services or physical goods from us, you may provide us information like your shipping address or delivery instructions. We use this information for things like processing, fulfilling, and delivering your order, and to provide support in connection with the product or service you purchase.

detect abuse

When we detect spam, malware, illegal content, and other forms of abuse on our systems in violation of our policies, we may disable your account or take other appropriate action. In certain circumstances, we may also report the violation to appropriate authorities.

devices

For example, we can use information from your devices to help you decide which device you'd like to use to install an app or view a movie you buy from Google Play. We also use this information to help protect your account.

ensure and improve

For example, we analyze how people interact with advertising to improve the performance of our ads.

ensure our services are working as intended

For example, we continuously monitor our systems to look for problems. And if we find something wrong with a specific feature, reviewing activity information collected before the problem started allows us to fix things more quickly.

Information about things near your device

If you use Google's Location services on Android, we can improve the performance of apps that rely on your location, like Google Maps. If you use Google's Location services, your device sends information to Google about its location, sensors (like accelerometer), and nearby cell towers and Wi-Fi access points (like MAC address and signal strength). All these things help to determine your location. You can use your device settings to enable Google Location services. [Learn more](#)

legal process, or enforceable governmental request

Like other technology and communications companies, Google regularly receives requests from governments and courts around the world to disclose user data. Respect for the privacy and security of data you store with Google underpins our approach to complying with these legal requests. Our legal team reviews each and every request, regardless of type, and we frequently push back when a request appears to be overly broad or doesn't follow the correct process. Learn more in our [Transparency Report](#).

make improvements

For example, we use cookies to analyze how people interact with our services. And that analysis can help us build better products. For example, it may help us discover that it's taking people too long to complete a certain task or that they have trouble finishing steps at all. We can then redesign that feature and improve the product for everyone.

may link information

Google Analytics relies on first-party cookies, which means the cookies are set by the Google Analytics customer. Using our systems, data generated through Google Analytics can be linked by the Google Analytics customer and by Google to third-party cookies that are related to visits to other websites. For example, an advertiser may want to use its Google Analytics data to create more relevant ads, or to further analyze its traffic. [Learn more](#)

partner with Google

There are over 2 million non-Google websites and apps that partner with Google to show ads. [Learn more](#)

payment information

For example, if you add a credit card or other payment method to your Google Account, you can use it to buy things across our services, like apps in the Play Store. We may also ask for other information, like a business tax ID, to help process your payment. In some cases, we may also need to verify your identity and may ask you for information to do this.

We may also use payment information to verify that you meet age requirements, if, for example, you enter an incorrect birthday indicating you're not old enough to have a Google Account. [Learn more](#)

personalized ads

You may also see personalized ads based on information from the advertiser. If you shopped on an advertiser's website, for example, they can use that visit information to show you ads. [Learn more](#)

phone number

If you add your phone number to your account, it can be used for different purposes across Google services, depending on your settings. For example, your phone number can be used to help you access your account if you forget your password, help people find and connect with you, and make the ads you see more relevant to you. [Learn more](#)

protect against abuse

For example, information about security threats can help us notify you if we think your account has been compromised (at which point we can help you take steps to protect your account).

publicly accessible sources

For example, we may collect information that's publicly available online or from other public sources to help train Google's language models and build features like Google Translate.

rely on cookies to function properly

For example, we use a cookie called 'lbc's' that makes it possible for you to open many Google Docs in one browser. Blocking this cookie would prevent Google Docs from working as expected. [Learn more](#)

safety and reliability

Some examples of how we use your information to help keep our services safe and reliable include:

- Collecting and analyzing IP addresses and cookie data to protect against automated abuse. This abuse takes many forms, such as sending spam to Gmail users, stealing money from advertisers by fraudulently clicking on ads, or

forms, such as sending spam to Gmail users, stealing money from advertisers by fraudulently clicking on ads, or censoring content by launching a Distributed Denial of Service (DDoS) attack.

- The "last account activity" feature in Gmail can help you find out if and when someone accessed your email without your knowledge. This feature shows you information about recent activity in Gmail, such as the IP addresses that accessed your mail, the associated location, and the date and time of access. [Learn more](#)

sensitive categories

When showing you personalized ads, we use topics that we think might be of interest to you based on your activity. For example, you may see ads for things like "Cooking and Recipes" or "Air Travel." We don't use topics or show personalized ads based on sensitive categories like race, religion, sexual orientation, or health. And we [require the same from advertisers that use our services](#).

Sensor data from your device

Your device may have sensors that can be used to better understand your location and movement. For example, an accelerometer can be used to determine your speed and a gyroscope to figure out your direction of travel.

servers around the world

For example, we operate data centers located [around the world](#) to help keep our products continuously available for users.

services to make and receive calls or send and receive messages

Examples of these services include:

- Google Hangouts, for making domestic and international calls
- Google Voice, for making calls, sending text messages, and managing voicemail
- Google Fi, for a phone plan

show trends

When lots of people start searching for something, it can provide useful information about particular trends at that time. Google Trends samples Google web searches to estimate the popularity of searches over a certain period of time and shares those results publicly in aggregated terms. [Learn more](#)

specific Google services

For example, you can delete [your blog](#) from Blogger or a [Google Site you own](#) from Google Sites. You can also delete [reviews](#) you've left on apps, games, and other content in the Play Store.

specific partners

For example, we allow YouTube creators and advertisers to work with measurement companies to learn about the audience of their YouTube videos or ads, using cookies or similar technologies. Another example is merchants on our shopping pages, who use cookies to understand how many different people see their product listings. [Learn more](#) about these partners and how they use your information.

synced with your Google Account

Your Chrome browsing history is only saved to your account if you've enabled Chrome synchronization with your Google Account. [Learn more](#)

the people who matter most to you online

For example, when you type an address in the To, Cc, or Bcc field of an email you're composing, Gmail will suggest addresses based on the people you [contact most frequently](#).

third parties

For example, we process your information to report use statistics to rights holders about how their content was used in our services. We may also process your information if people search for your name and we display search results for sites containing publicly available information about you.

Views and interactions with content and ads

For example, we collect information about views and interactions with ads so we can provide aggregated reports to advertisers, like telling them whether we served their ad on a page and whether the ad was likely seen by a viewer. We may also measure [other](#) interactions, such as how you move your mouse over an ad or if you interact with the page on which the ad appears.

your activity on other sites and apps

This activity might come from your use of Google services, like from syncing your account with Chrome or your visits to sites and apps that partner with Google. Many websites and apps partner with Google to improve their content and services. For example, a website might use our advertising services (like AdSense) or analytics tools (like Google Analytics), or it might embed other content (such as videos from YouTube). These services may share information about your activity with Google and, depending on your [account settings](#) and the products in use (for instance, when a partner uses Google Analytics in conjunction with our advertising services), this data may be associated with your personal information.

[Learn more](#) about how Google uses data when you use our partners' sites or apps.

APPENDIX N.1

CHROME PRIVACY NOTICE (UNHIGHLIGHTED)

Google Chrome Privacy Notice

Learn how to control the information that's collected, stored, and shared when you use the Google Chrome browser on your computer or mobile device, Chrome OS, and when you enable Safe Browsing in Chrome. Although this policy describes features that are specific to Chrome, any personal information that is provided to Google or stored in your Google Account will be used and protected in accordance with the [Google Privacy Policy](#), as changed from time to time. [Google's retention policy](#) describes how and why Google retains data.

If Google Play apps have been enabled on your Chromebook, the use and protection of information collected by Google Play or the Android operating system is governed by the [Google Play Terms of Service](#) and [Google Privacy Policy](#). Details specific to Chrome are provided in this Notice where relevant.

Details about the Privacy Notice

In this Privacy Notice, we use the term "Chrome" to refer to all the products in the Chrome family listed above. If there are differences in our policy between products, we'll point them out. We change this Privacy Notice from time to time.

"Beta," "Dev," or "Canary" versions of Chrome let you test new features still being created in Chrome. This Privacy Notice applies to all versions of Chrome, but might not be up-to-date for features still under development.

For step-by-step guides to managing your privacy preferences, read [this overview of Chrome's privacy controls](#).

Table of contents:

- [Browser modes](#)
- [Managing users in Chrome](#)
- [Safe Browsing practices](#)
- [Privacy practices of using apps, extensions, themes, services, and other add-ons](#)
- [More information](#)

Browser modes

You don't need to provide any personal information to use Chrome, but Chrome has different modes that you can use to change or improve your browsing experience. Privacy practices are different depending on the mode that you're using.

Basic browser mode

The basic browser mode stores information locally on your system. This information might include:

- Browsing history information. For example, Chrome stores the URLs of pages that you visit, a cache of text, images and other resources from those pages, and, if the [network actions prediction](#) feature is turned on, a list of some of the IP addresses linked from those pages.
- Personal information and passwords, to help you fill out forms or sign in to sites you visit.
- A list of permissions that you have granted to websites.
- [Cookies](#) or data from websites that you visit.
- Data saved by add-ons.
- A record of what you downloaded from websites.

You can manage this information in several ways:

- You can [delete your browsing history information](#).
- You can manage or delete stored browsing data from the [Cookies and Site Data dialog](#).
- You can stop Chrome from [accepting cookies](#). [Learn more](#).
- You can review stored passwords in Chrome settings. [Learn more](#).
- You can view and manage your stored Autofill information. [Learn more](#).

The personal information that Chrome stores won't be sent to Google unless you choose to store that data in your [Google Account](#) by turning on sync, or, in the case of payment cards and billing information, choosing specific payment card and billing information to store in your Google Payments account. [Learn More](#).

How Chrome handles your information

Information for website operators. Sites that you visit using Chrome will automatically receive [standard log information](#), including your system's IP address and data from [cookies](#). In general, the fact that you use Chrome to access Google services, such as Gmail, does not cause Google to receive any additional personally identifying information about you. On Google websites and other websites that opt in, if Chrome detects signs that you are being actively attacked by someone on the network (a "man in the middle attack"), Chrome may send information about that connection to Google or the website you visited to help determine the extent of the attack and how the attack functions. Google provides participating website owners with reports about attacks occurring on their sites.

Prerendering. To load web pages faster, Chrome has a setting that can look up the IP addresses of links on a web page and open network connections. Sites and Android apps can also ask the browser to preload the pages you might visit next. Preloading requests from Android apps are controlled by the same setting as Chrome-initiated predictions. But preloading instructions from sites are always performed, regardless of whether Chrome's network prediction feature is enabled. If prerendering is requested, whether by Chrome or by a site or app, the preloaded site is allowed to set and read its own cookies just as if you had visited it, even if you don't end up visiting the prerendered page. [Learn more](#).

Location. To get more geographically relevant information, Chrome gives you the option to share your location with a site. Chrome won't allow a site to access your location without your permission; however, on mobile devices, Chrome automatically shares your location with your default search engine if the Chrome app has permission to access your location and you haven't blocked geolocation for the associated web site. Chrome uses Google Location Services to estimate your location. The information that Chrome sends to Google Location Services may include:

- The Wi-Fi routers closest to you
- Cell IDs of the cell towers closest to you
- The strength of your Wi-Fi or cell signal
- The IP address that is currently assigned to your device

Google doesn't have control over third-party websites or their privacy practices, so be cautious when sharing your location with a website.

Updates. Chrome periodically sends information to Google to check for updates, get connectivity status, validate the current time, and estimate the number of active users.

Search features. If you are signed in to a Google site and Google is your default search engine, searches you perform using the omnibox or the search box on the new tab page in Chrome are stored in your Google Account.

Search prediction service. To help you find information faster, Chrome uses the prediction service provided by your default search engine to offer likely completions to the text you are typing. When you search using the omnibox or the search box on the new tab page in Chrome, the characters you type (even if you haven't hit "enter" yet) are sent to your default search engine. If Google is your default search engine, predictions are based on your own search history, topics related to what you're typing in the omnibox or in the search box on the new tab page, and what other people are searching for. [Learn more](#). Predictions can also be based on your browsing history. [Learn more](#).

Navigation assistance. When you can't connect to a web page, you can get suggestions for alternative pages similar to the one you're trying to reach. In order to offer you suggestions, Chrome sends Google the URL of the page you're trying to reach.

Autofill and password management. In order to improve Chrome's Autofill and password management services, Chrome sends Google limited, anonymous information about the web forms that you encounter or submit while Autofill or password management is enabled, including a hashed URL of the web page and details of the form's structure. [Learn more](#).

Payments. When you are signed into Chrome with your Google account, Chrome may offer to save payment cards and related billing information to your Google Payments account. Chrome may also offer you the option of filling payment cards from your Google Payments account into web forms. If you have cards saved locally in Chrome, Chrome may prompt you to save them to your Google Payments account. If you use a payment card from your Google Payments account or choose to save your payment card in your Google Payments account for future use, Chrome will collect information about your computer and share it with Google Pay to protect you from fraud and provide the service. If supported by the merchant, Chrome will also allow you to pay using Google Pay.

Language. In order to customize your browsing experience based on the languages that you prefer to read, Chrome will keep a count of the most popular languages of the sites you visit. This language preference will be sent to Google to customize your experience in Chrome. If you have turned on Chrome sync, this language profile will be associated with your Google Account and, if you include Chrome history in your Google Web & App Activity, it may be used to personalize your experience in other Google products. [View Activity Controls](#).

Web Apps on Android. On Android devices, if you select "add to homescreen" for a website that has been optimized for [fast, reliable performance on mobile devices](#), then Chrome will use a Google server to create a native Android package for that website on your device. The Android package allows you to interact with the web app as you would with an Android app. For example, the web app will appear in your list of installed apps. [Learn more](#).

Usage statistics and crash reports. By default, usage statistics and crash reports are sent to Google to help us improve our products. Usage statistics contain information such as preferences, button clicks, performance statistics, and memory usage. In general, usage statistics do not include web page URLs or personal information, but, if you have turned on "Make searches and browsing better / Sends URLs of pages you visit to Google", then Chrome usage statistics include information about the web pages you visit and your usage of them. If you have enabled Chrome sync, Chrome may combine any declared age and gender information from your Google account with our statistics to help us build products better suited for all demographics. For example, we may collect statistics to identify web pages that load slowly. We use this information to improve our products and services, and to give web developers insight into improving their pages. Crash reports contain system information at the time of the crash, and may contain web page URLs or personal information, depending on what was happening at the time the crash report was triggered. We may share aggregated, non-personally identifiable information publicly and with partners — like publishers, advertisers or web developers. You can change whether usage statistics and crash reports are sent to Google at any time. [Learn more](#). If Google Play apps are enabled on your Chromebook and Chrome usage statistics are enabled, then Android diagnostic and usage data is also sent to Google.

Media licenses. Some websites encrypt media to protect against unauthorized access and copying. For HTML5 sites, this key exchange is done using the Encrypted Media Extensions API. In the process of allowing access to this media, session identifiers and licenses may be stored locally. These identifiers can be cleared by the user in Chrome using [Clear Browsing Data](#) with "Cookies and other site data" selected. For sites that use Adobe Flash Access, Chrome will provide a unique identifier to content partners and websites. The identifier is stored on your system. You can deny this access in the settings under Content Settings, Protected content, and reset the ID using [Clear Browsing Data](#) with "Cookies and other site data" selected. If you access protected content in Chrome on Android, or access higher quality or offline content on Chrome OS, a content provider may ask Chrome for a certificate to verify the eligibility of the device. Your device will share a site specific identifier with the website to certify that its cryptographic keys are protected by Chrome hardware. [Learn more](#).

Other Google services. This notice describes the Google services that are enabled by default in Chrome. In addition, Chrome may offer other Google web services. For example, if you encounter a page in a different language, Chrome will offer to send the text to Google for translation. You will be notified of your options for controlling these services when you first use them. You can find more information in the [Chrome Privacy Whitepaper](#).

Identifiers in Chrome

Chrome includes a number of unique and non-unique identifiers necessary to power features and functional services. For example, if you use push messaging, an identifier is created in order to deliver notices to you. Where possible, we use non-unique identifiers and remove identifiers when they are no longer needed. Additionally, the following identifiers help us develop, distribute, and promote Chrome, but are not directly related to a Chrome feature.

- **Installation tracking.** Each copy of the Windows desktop version of the Chrome browser includes a temporary randomly generated installation number that is sent to Google when you install and first use Chrome. This temporary identifier helps us estimate the number of installed browsers, and will be deleted the first time Chrome updates. The mobile version of Chrome uses a variant of the device identifier on an ongoing basis to track the number of installations of Chrome.
- **Promotion tracking.** In order to help us track the success of promotional campaigns, Chrome generates a unique token that is sent to Google when you first run and use the browser. In addition, if you received or reactivated your copy of the desktop version of the Chrome browser as part of a promotional campaign and Google is your default search engine, then searches from the omnibox will include a non-unique promotional tag. All mobile versions of the Chrome browser also include a non-unique promotional tag with searches from the omnibox. Chrome OS may also send a non-unique promotional tag to Google periodically (including during initial setup) and when performing searches with Google. [Learn more](#).
- **Field trials.** We sometimes conduct limited tests of new features. Chrome includes a seed number that is randomly selected on first run to assign browsers to experiment groups. Experiments may also be limited by country (determined by your IP address), operating system, Chrome version, and other parameters. A list of field trials that are currently active on your installation of Chrome is included in all requests sent to Google. [Learn more](#).

Sign-in and Sync Chrome modes

You also have the option to use the Chrome browser while signed in to your Google Account, with or without sync enabled.

Sign in on Desktop. On desktop versions of Chrome, signing into or out of any Google web service, like google.com, signs you into or out of Chrome. You can turn this off in settings. [Learn more](#). If you are signed in to your Google Account on desktop, Chrome may offer to save your payment cards and related billing information to your Google Payments account. This personal information will be used and protected in accordance with the [Google Privacy Policy](#).

Sync. When you sign in to the Chrome browser or a Chromebook and enable sync with your [Google Account](#), your personal information is saved in your Google Account on Google's servers so you may access it when you sign in and sync to Chrome on other computers and devices. This personal information will be used and protected in accordance with the [Google Privacy Policy](#). This type of information can include:

- Browsing history
- Bookmarks
- Tabs
- Passwords and Autofill information
- Other browser settings, like installed extensions

Sync is only enabled if you choose. [Learn More](#). To customize the specific information that you have enabled to sync, use the "Settings" menu. [Learn more](#). You can see the amount of Chrome data stored for your Google Account and manage it on the [Data from Chrome sync Dashboard](#). On the Dashboard, except for Google Accounts created through Family Link, you can also disable sync and delete all the associated data from Google's servers. [Learn more](#). For Google Accounts created in Family Link, sign-in is required and sync cannot be disabled because it provides parent management features, such as website restrictions. However, children with Family Link accounts can still delete their data and disable synchronization of most data types. [Learn More](#). The [Privacy Notice for Google Accounts created in Family Link](#) applies to Chrome sync data stored in those accounts.

How Chrome handles your synced information

When you enable sync with your Google Account, we use your browsing data to improve and personalize your experience within Chrome. You can also personalize your experience on other Google products, by allowing your Chrome history to be included in your Google Web & App Activity. [Learn more](#).

You can change this setting on your [Account History](#) page or [manage your private data](#) whenever you like. If you don't use your Chrome data to personalize your Google experience outside of Chrome, Google will only use your Chrome data after it's anonymized and aggregated with data from other users. Google uses this data to develop new features, products, and services, and to improve the overall quality of existing products and services. If you would like to use Google's cloud to store and sync your Chrome data but you don't want Google to access the data, you can encrypt your synced Chrome data with your own sync passphrase. [Learn more](#).

Incognito mode and guest mode

You can limit the information Chrome stores on your system by using [incognito mode or guest mode](#). In these modes, Chrome won't store certain information, such as:

- Basic browsing history information like URLs, cached page text, or IP addresses of pages linked from the websites you visit
- Snapshots of pages that you visit
- Records of your downloads, although the files you download will still be stored elsewhere on your computer or device

How Chrome handles your incognito or guest information

Cookies. Chrome won't share existing cookies with sites you visit in incognito or guest mode. Sites may deposit new [cookies](#) on your system while you are in these modes, but they'll only be stored and transmitted until you close the last incognito or guest window.

Browser configuration changes. When you make changes to your browser configuration, like bookmarking a web page or changing your settings, this

information is saved. These changes are not affected by incognito or guest mode.

Permissions. Permissions you grant in incognito mode are not saved to your existing profile.

Profile information. In incognito mode, you will still have access to information from your existing profile, such as suggestions based on your browsing history and saved passwords, while you are browsing. In guest mode, you can browse without seeing information from any existing profiles.

Managing Users in Chrome

Managing users for personal Chrome use

You can set up personalized versions of Chrome for users sharing one device or computer. Note that anyone with access to your device can view all the information in all profiles. To truly protect your data from being seen by others, use the built-in user accounts in your operating system. [Learn more.](#)

Managing users on Chrome for Enterprise

Some Chrome browsers or Chromebooks are managed by a school or company. In that case, the administrator has the ability to apply policies to the browser or Chromebook. Chrome contacts Google to check for these policies when a user first starts browsing (except in guest mode). Chrome checks periodically for updates to policies.

An administrator can set up a policy for status and activity reporting for Chrome, including location information for Chrome OS devices. Your administrators may also have the ability to access, monitor, use or disclose data accessed from your managed device.

Safe Browsing practices

Google Chrome and certain third-party browsers, like some versions of Mozilla Firefox and Apple's Safari, include Google's Safe Browsing feature. With Safe Browsing, information about suspicious websites is sent and received between the browser you are using and Google's servers.

How Safe Browsing works

Your browser contacts Google's servers periodically to download the most recent "Safe Browsing" list, which contains known phishing and malware sites. The most recent copy of the list is stored locally on your system. Google doesn't collect any account information or other personally identifying information as part of this contact. However, it does receive [standard log information](#), including an IP address and [cookies](#).

Each site you visit is checked against the Safe Browsing list on your system. If there's a match, your browser sends Google a hashed, partial copy of the site's URL so that Google can send more information to your browser. Google cannot determine the real URL from this information. [Learn more.](#)

The following Safe Browsing features are specific to Chrome:

- If you have turned on Safe Browsing's Enhanced Protection mode, Chrome provides additional protections, and sends Google additional data, as described in Chrome settings. [Learn more](#). Some of these protections may also be available as standalone features, subject to separate controls, where Standard Protection is enabled.
- If you have turned on "Make searches and browsing better / Sends URLs of pages you visit to Google" and Safe Browsing is enabled, Chrome sends Google the full URL of each site you visit to determine whether that site is safe. If you also sync your browsing history without a sync passphrase, these URLs will be temporarily associated with your Google account to provide more personalized protection. This feature is disabled in incognito and guest modes.
- Some versions of Chrome feature Safe Browsing technology that can identify potentially harmful sites and potentially dangerous file types not already known by Google. The full URL of the site or potentially dangerous file might also be sent to Google to help determine whether the site or file is harmful.
- Chrome uses Safe Browsing technology to scan your computer periodically, in order to detect unwanted software that prevents you from changing your settings or otherwise interferes with the security and stability of your browser. [Learn more](#). If this kind of software is detected, Chrome might offer you the option to download the [Chrome Cleanup Tool](#) to remove it.
- You can choose to send additional data to help improve Safe Browsing when you access a site that appears to contain malware or when Chrome detects unwanted software on your computer. [Learn more](#).
- If you use Chrome's password manager, Safe Browsing checks with Google when you enter any saved password on an uncommon page to protect you from phishing attacks. Chrome does not send your passwords to Google as part of this protection. In addition, Safe Browsing protects your Google Account password. If you enter it on a likely phishing site, Chrome will prompt you to change your Google Account password. If you sync your browsing history, or if you are signed in to your Google Account and choose to notify Google, Chrome will also flag your Google Account as likely phished.
- If you are signed in to your Google Account, Chrome will also warn you when you use a username and password that may have been exposed in a data breach. To check, when you sign in to a site, Chrome sends Google a partial hash of your username and other encrypted information about your password, and Google returns a list of possible matches from known breaches. Chrome uses this list to determine whether your username and password were exposed. Google does not learn your username or password, or whether they were exposed, as part of this process. This feature can be disabled in Chrome settings. [Learn more](#).
- On desktop and Android versions of Chrome, you can always choose to [disable the Safe Browsing feature within Chrome settings](#). On iOS versions of Chrome, Apple controls the Safe Browsing technology used by your device and may send data to Safe Browsing providers other than Google.

Privacy practices of apps, extensions, themes, services, and other add-ons

You can use apps, extensions, themes, services and other add-ons with Chrome, including some that may be preinstalled or integrated with Chrome. Add-ons developed and provided by Google may communicate with Google servers and are subject to the [Google Privacy Policy](#) unless otherwise indicated. Add-ons developed and provided by others are the responsibility of the add-on creators and may have different privacy policies.

Managing add-ons

Before installing an add-on, you should review the requested permissions. Add-ons can have permission to do various things, like:

- Store, access, and share data stored locally or in your Google Drive account
- View and access content on websites you visit
- Use notifications that are sent through Google servers

Chrome can interact with add-ons in a few different ways:

- Checking for updates
- Downloading and installing updates
- Sending usage indicators to Google about the add-ons

Some add-ons might require access to a unique identifier for digital rights management or for delivery of push messaging. You can disable the use of identifiers by removing the add-on from Chrome.

From time to time, Google might discover an add-on that poses a security threat, violates the developer terms for Chrome Web Store, or violates other legal agreements, laws, regulations, or policies. Chrome periodically downloads a list of these dangerous add-ons, in order to remotely disable or remove them from your system.

Server Log Privacy Information

Like most websites, our servers automatically record the page requests made when you visit our sites. These "server logs" typically include your web request, Internet Protocol address, browser type, browser language, the date and time of your request and one or more cookies that may uniquely identify your browser.

Here is an example of a typical log entry for where the search is for "cars" looks like this, followed by a breakdown of its parts:

123.45.67.89 - 25/Mar/2003 10:15:32 - https://www.google.com/search?q=cars - Firefox 1.0.7; Windows NT 5.1 - 740674ce2123e969

- 123.45.67.89 is the Internet Protocol address assigned to the user by the user's ISP. Depending on the user's service, a different address may be assigned to the user by their service provider each time they connect to the Internet.;
- 25/Mar/2003 10:15:32 is the date and time of the query.;
- https://www.google.com/search?q=cars is the requested URL, including the search query.;
- Firefox 1.0.7; Windows NT 5.1 is the browser and operating system being used.;
- 740674ce2123e969 is the unique cookie ID that was assigned to this particular computer the first time it visited a Google site. (Cookies can be deleted by users. If the user has deleted the cookie from the computer since the last time they've/he visited Google, then it will be the unique cookie ID assigned to their device the user the next time they/he visits Google from that particular computer).

More information

Information that Google receives when you use Chrome is used and protected under the [Google Privacy Policy](#). Information that other website operators and add-on developers receive, including [cookies](#), is subject to the privacy policies of those websites.

Google complies with certain [legal frameworks](#) relating to the transfer of data, such as the EU-US and Swiss-US Privacy Shield Framework. [Learn more](#).

Key Terms

Cookies

A cookie is a small file containing a string of characters that is sent to your computer when you visit a website. When you visit the site again, the cookie allows that site to recognize your browser. Cookies may store user preferences and other information. You can configure your browser to refuse all cookies or to indicate when a cookie is being sent. However, some website features or services may not function properly without cookies. Learn more about [how Google uses cookies](#) and how Google uses data, including cookies, [when you use our partners' sites or apps](#).

Google Account

You may access some of our services by signing up for a [Google Account](#) and providing us with some personal information (typically your name, email address and a password). This account information is used to authenticate you when you access Google services and protect your account from unauthorized access by others. You can edit or delete your account at any time through your Google Account settings.

Follow us



Chrome Family

Other Platforms

Chromebooks

Chromecast

Chrome Cleanup Tool

Enterprise

Download Chrome Browser

Chrome Browser for Enterprise

Chrome Devices

Chrome OS

Google Cloud

G Suite

Education

Google Chrome Browser

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Chromium

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Chrome Experiments

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Chrome Dev

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Stay Connected

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Privacy and Terms

About Google

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Help

English - United States

[Learn more](#)
[Ok, Got it](#)

APPENDIX N.2

CHROME PRIVACY NOTICE (HIGHLIGHTED)

Google Chrome Privacy Notice

Learn how to control the information that's collected, stored, and shared when you use the Google Chrome browser on your computer or mobile device, Chrome OS, and when you enable Safe Browsing in Chrome. Although this policy describes features that are specific to Chrome, any personal information that is provided to Google or stored in your Google Account will be used and protected in accordance with the [Google Privacy Policy](#), as changed from time to time. [Google's retention policy](#) describes how and why Google retains data.

If Google Play apps have been enabled on your Chromebook, the use and protection of information collected by Google Play or the Android operating system is governed by the [Google Play Terms of Service](#) and [Google Privacy Policy](#). Details specific to Chrome are provided in this Notice where relevant.

Details about the Privacy Notice

In this Privacy Notice, we use the term "Chrome" to refer to all the products in the Chrome family listed above. If there are differences in our policy between products, we'll point them out. We change this Privacy Notice from time to time.

"Beta," "Dev," or "Canary" versions of Chrome let you test new features still being created in Chrome. This Privacy Notice applies to all versions of Chrome, but might not be up-to-date for features still under development.

For step-by-step guides to managing your privacy preferences, read [this overview of Chrome's privacy controls](#).

Table of contents:

- [Browser modes](#)
- [Managing users in Chrome](#)
- [Safe Browsing practices](#)
- [Privacy practices of using apps, extensions, themes, services, and other add-ons](#)
- [More information](#)

Browser modes

You don't need to provide any personal information to use Chrome, but Chrome has different modes that you can use to change or improve your browsing experience. Privacy practices are different depending on the mode that you're using.

Basic browser mode

The basic browser mode stores information locally on your system. This information might include:

- Browsing history information. For example, Chrome stores the URLs of pages that you visit, a cache of text, images and other resources from those pages, and, if the [network actions prediction](#) feature is turned on, a list of some of the IP addresses linked from those pages.
- Personal information and passwords, to help you fill out forms or sign in to sites you visit.
- A list of permissions that you have granted to websites.
- [Cookies](#) or data from websites that you visit.
- Data saved by add-ons.
- A record of what you downloaded from websites.

You can manage this information in several ways:

- You can [delete your browsing history information](#).
- You can manage or delete stored browsing data from the [Cookies and Site Data dialog](#).
- You can stop Chrome from [accepting cookies](#). [Learn more](#).
- You can review stored passwords in Chrome settings. [Learn more](#).
- You can view and manage your stored Autofill information. [Learn more](#).

The personal information that Chrome stores won't be sent to Google unless you choose to store that data in your [Google Account](#) by turning on sync, or, in the case of payment cards and billing information, choosing specific payment card and billing information to store in your Google Payments account. [Learn More](#).

How Chrome handles your information

Information for website operators. Sites that you visit using Chrome will automatically receive [standard log information](#), including your system's IP address and data from [cookies](#). In general, the fact that you use Chrome to access Google services, such as Gmail, does not cause Google to receive any additional personally identifying information about you. On Google websites and other websites that opt in, if Chrome detects signs that you are being actively attacked by someone on the network (a "man in the middle attack"), Chrome may send information about that connection to Google or the website you visited to help determine the extent of the attack and how the attack functions. Google provides participating website owners with reports about attacks occurring on their sites.

Prerendering. To load web pages faster, Chrome has a setting that can look up the IP addresses of links on a web page and open network connections. Sites and Android apps can also ask the browser to preload the pages you might visit next. Preloading requests from Android apps are controlled by the same setting as Chrome-initiated predictions. But preloading instructions from sites are always performed, regardless of whether Chrome's network prediction feature is enabled. If prerendering is requested, whether by Chrome or by a site or app, the preloaded site is allowed to set and read its own cookies just as if you had visited it, even if you don't end up visiting the prerendered page. [Learn more](#).

Location. To get more geographically relevant information, Chrome gives you the option to share your location with a site. Chrome won't allow a site to access your location without your permission; however, on mobile devices, Chrome automatically shares your location with your default search engine if the Chrome app has permission to access your location and you haven't blocked geolocation for the associated web site. Chrome uses Google Location Services to estimate your location. The information that Chrome sends to Google Location Services may include:

- The Wi-Fi routers closest to you
- Cell IDs of the cell towers closest to you
- The strength of your Wi-Fi or cell signal
- The IP address that is currently assigned to your device

Google doesn't have control over third-party websites or their privacy practices, so be cautious when sharing your location with a website.

Updates. Chrome periodically sends information to Google to check for updates, get connectivity status, validate the current time, and estimate the number of active users.

Search features. If you are signed in to a Google site and Google is your default search engine, searches you perform using the omnibox or the search box on the new tab page in Chrome are stored in your Google Account.

Search prediction service. To help you find information faster, Chrome uses the prediction service provided by your default search engine to offer likely completions to the text you are typing. When you search using the omnibox or the search box on the new tab page in Chrome, the characters you type (even if you haven't hit "enter" yet) are sent to your default search engine. If Google is your default search engine, predictions are based on your own search history, topics related to what you're typing in the omnibox or in the search box on the new tab page, and what other people are searching for. [Learn more](#). Predictions can also be based on your browsing history. [Learn more](#).

Navigation assistance. When you can't connect to a web page, you can get suggestions for alternative pages similar to the one you're trying to reach. In order to offer you suggestions, Chrome sends Google the URL of the page you're trying to reach.

Autofill and password management. In order to improve Chrome's Autofill and password management services, Chrome sends Google limited, anonymous information about the web forms that you encounter or submit while Autofill or password management is enabled, including a hashed URL of the web page and details of the form's structure. [Learn more](#).

Payments. When you are signed into Chrome with your Google account, Chrome may offer to save payment cards and related billing information to your Google Payments account. Chrome may also offer you the option of filling payment cards from your Google Payments account into web forms. If you have cards saved locally in Chrome, Chrome may prompt you to save them to your Google Payments account. If you use a payment card from your Google Payments account or choose to save your payment card in your Google Payments account for future use, Chrome will collect information about your computer and share it with Google Pay to protect you from fraud and provide the service. If supported by the merchant, Chrome will also allow you to pay using Google Pay.

Language. In order to customize your browsing experience based on the languages that you prefer to read, Chrome will keep a count of the most popular languages of the sites you visit. This language preference will be sent to Google to customize your experience in Chrome. If you have turned on Chrome sync, this language profile will be associated with your Google Account and, if you include Chrome history in your Google Web & App Activity, it may be used to personalize your experience in other Google products. [View Activity Controls](#).

Web Apps on Android. On Android devices, if you select "add to homescreen" for a website that has been optimized for [fast, reliable performance on mobile devices](#), then Chrome will use a Google server to create a native Android package for that website on your device. The Android package allows you to interact with the web app as you would with an Android app. For example, the web app will appear in your list of installed apps. [Learn more](#).

Usage statistics and crash reports. By default, usage statistics and crash reports are sent to Google to help us improve our products. Usage statistics contain information such as preferences, button clicks, performance statistics, and memory usage. In general, usage statistics do not include web page URLs or personal information, but, if you have turned on "Make searches and browsing better / Sends URLs of pages you visit to Google", then Chrome usage statistics include information about the web pages you visit and your usage of them. If you have enabled Chrome sync, Chrome may combine any declared age and gender information from your Google account with our statistics to help us build products better suited for all demographics. For example, we may collect statistics to identify web pages that load slowly. We use this information to improve our products and services, and to give web developers insight into improving their pages. Crash reports contain system information at the time of the crash, and may contain web page URLs or personal information, depending on what was happening at the time the crash report was triggered. We may share aggregated, non-personally identifiable information publicly and with partners — like publishers, advertisers or web developers. You can change whether usage statistics and crash reports are sent to Google at any time. [Learn more](#). If Google Play apps are enabled on your Chromebook and Chrome usage statistics are enabled, then Android diagnostic and usage data is also sent to Google.

Media licenses. Some websites encrypt media to protect against unauthorized access and copying. For HTML5 sites, this key exchange is done using the Encrypted Media Extensions API. In the process of allowing access to this media, session identifiers and licenses may be stored locally. These identifiers can be cleared by the user in Chrome using [Clear Browsing Data](#) with "Cookies and other site data" selected. For sites that use Adobe Flash Access, Chrome will provide a unique identifier to content partners and websites. The identifier is stored on your system. You can deny this access in the settings under Content Settings, Protected content, and reset the ID using [Clear Browsing Data](#) with "Cookies and other site data" selected. If you access protected content in Chrome on Android, or access higher quality or offline content on Chrome OS, a content provider may ask Chrome for a certificate to verify the eligibility of the device. Your device will share a site specific identifier with the website to certify that its cryptographic keys are protected by Chrome hardware. [Learn more](#).

Other Google services. This notice describes the Google services that are enabled by default in Chrome. In addition, Chrome may offer other Google web services. For example, if you encounter a page in a different language, Chrome will offer to send the text to Google for translation. You will be notified of your options for controlling these services when you first use them. You can find more information in the [Chrome Privacy Whitepaper](#).

Identifiers in Chrome

Chrome includes a number of unique and non-unique identifiers necessary to power features and functional services. For example, if you use push messaging, an identifier is created in order to deliver notices to you. Where possible, we use non-unique identifiers and remove identifiers when they are no longer needed. Additionally, the following identifiers help us develop, distribute, and promote Chrome, but are not directly related to a Chrome feature.

- **Installation tracking.** Each copy of the Windows desktop version of the Chrome browser includes a temporary randomly generated installation number that is sent to Google when you install and first use Chrome. This temporary identifier helps us estimate the number of installed browsers, and will be deleted the first time Chrome updates. The mobile version of Chrome uses a variant of the device identifier on an ongoing basis to track the number of installations of Chrome.
- **Promotion tracking.** In order to help us track the success of promotional campaigns, Chrome generates a unique token that is sent to Google when you first run and use the browser. In addition, if you received or reactivated your copy of the desktop version of the Chrome browser as part of a promotional campaign and Google is your default search engine, then searches from the omnibox will include a non-unique promotional tag. All mobile versions of the Chrome browser also include a non-unique promotional tag with searches from the omnibox. Chrome OS may also send a non-unique promotional tag to Google periodically (including during initial setup) and when performing searches with Google. [Learn more](#).
- **Field trials.** We sometimes conduct limited tests of new features. Chrome includes a seed number that is randomly selected on first run to assign browsers to experiment groups. Experiments may also be limited by country (determined by your IP address), operating system, Chrome version, and other parameters. A list of field trials that are currently active on your installation of Chrome is included in all requests sent to Google. [Learn more](#).

Sign-in and Sync Chrome modes

You also have the option to use the Chrome browser while signed in to your Google Account, with or without sync enabled.

Sign in on Desktop. On desktop versions of Chrome, signing into or out of any Google web service, like google.com, signs you into or out of Chrome. You can turn this off in settings. [Learn more](#). If you are signed in to your Google Account on desktop, Chrome may offer to save your payment cards and related billing information to your Google Payments account. This personal information will be used and protected in accordance with the [Google Privacy Policy](#).

Sync. When you sign in to the Chrome browser or a Chromebook and enable sync with your [Google Account](#), your personal information is saved in your Google Account on Google's servers so you may access it when you sign in and sync to Chrome on other computers and devices. This personal information will be used and protected in accordance with the [Google Privacy Policy](#). This type of information can include:

- Browsing history
- Bookmarks
- Tabs
- Passwords and Autofill information
- Other browser settings, like installed extensions

Sync is only enabled if you choose. [Learn More](#). To customize the specific information that you have enabled to sync, use the "Settings" menu. [Learn more](#). You can see the amount of Chrome data stored for your Google Account and manage it on the [Data from Chrome sync Dashboard](#). On the Dashboard, except for Google Accounts created through Family Link, you can also disable sync and delete all the associated data from Google's servers. [Learn more](#). For Google Accounts created in Family Link, sign-in is required and sync cannot be disabled because it provides parent management features, such as website restrictions. However, children with Family Link accounts can still delete their data and disable synchronization of most data types. [Learn More](#). The [Privacy Notice for Google Accounts created in Family Link](#) applies to Chrome sync data stored in those accounts.

How Chrome handles your synced information

When you enable sync with your Google Account, we use your browsing data to improve and personalize your experience within Chrome. You can also personalize your experience on other Google products, by allowing your Chrome history to be included in your Google Web & App Activity. [Learn more](#).

You can change this setting on your [Account History](#) page or [manage your private data](#) whenever you like. If you don't use your Chrome data to personalize your Google experience outside of Chrome, Google will only use your Chrome data after it's anonymized and aggregated with data from other users. Google uses this data to develop new features, products, and services, and to improve the overall quality of existing products and services. If you would like to use Google's cloud to store and sync your Chrome data but you don't want Google to access the data, you can encrypt your synced Chrome data with your own sync passphrase. [Learn more](#).

Incognito mode and guest mode

You can limit the information Chrome stores on your system by using [incognito mode](#) or [guest mode](#). In these modes, Chrome won't store certain information, such as:

- Basic browsing history information like URLs, cached page text, or IP addresses of pages linked from the websites you visit
- Snapshots of pages that you visit
- Records of your downloads, although the files you download will still be stored elsewhere on your computer or device

How Chrome handles your incognito or guest information

Cookies. Chrome won't share existing cookies with sites you visit in incognito or guest mode. Sites may deposit new [cookies](#) on your system while you are in these modes, but they'll only be stored and transmitted until you close the last incognito or guest window.

Browser configuration changes. When you make changes to your browser configuration, like bookmarking a web page or changing your settings, this

information is saved. These changes are not affected by incognito or guest mode.

Permissions. Permissions you grant in incognito mode are not saved to your existing profile.

Profile information. In incognito mode, you will still have access to information from your existing profile, such as suggestions based on your browsing history and saved passwords, while you are browsing. In guest mode, you can browse without seeing information from any existing profiles.

Managing Users in Chrome

Managing users for personal Chrome use

You can set up personalized versions of Chrome for users sharing one device or computer. Note that anyone with access to your device can view all the information in all profiles. To truly protect your data from being seen by others, use the built-in user accounts in your operating system. [Learn more.](#)

Managing users on Chrome for Enterprise

Some Chrome browsers or Chromebooks are managed by a school or company. In that case, the administrator has the ability to apply policies to the browser or Chromebook. Chrome contacts Google to check for these policies when a user first starts browsing (except in guest mode). Chrome checks periodically for updates to policies.

An administrator can set up a policy for status and activity reporting for Chrome, including location information for Chrome OS devices. Your administrators may also have the ability to access, monitor, use or disclose data accessed from your managed device.

Safe Browsing practices

Google Chrome and certain third-party browsers, like some versions of Mozilla Firefox and Apple's Safari, include Google's Safe Browsing feature. With Safe Browsing, information about suspicious websites is sent and received between the browser you are using and Google's servers.

How Safe Browsing works

Your browser contacts Google's servers periodically to download the most recent "Safe Browsing" list, which contains known phishing and malware sites. The most recent copy of the list is stored locally on your system. Google doesn't collect any account information or other personally identifying information as part of this contact. However, it does receive [standard log information](#), including an IP address and [cookies](#).

Each site you visit is checked against the Safe Browsing list on your system. If there's a match, your browser sends Google a hashed, partial copy of the site's URL so that Google can send more information to your browser. Google cannot determine the real URL from this information. [Learn more.](#)

The following Safe Browsing features are specific to Chrome:

- If you have turned on Safe Browsing's Enhanced Protection mode, Chrome provides additional protections, and sends Google additional data, as described in Chrome settings. [Learn more](#). Some of these protections may also be available as standalone features, subject to separate controls, where Standard Protection is enabled.
- If you have turned on "Make searches and browsing better / Sends URLs of pages you visit to Google" and Safe Browsing is enabled, Chrome sends Google the full URL of each site you visit to determine whether that site is safe. If you also sync your browsing history without a sync passphrase, these URLs will be temporarily associated with your Google account to provide more personalized protection. This feature is disabled in incognito and guest modes.
- Some versions of Chrome feature Safe Browsing technology that can identify potentially harmful sites and potentially dangerous file types not already known by Google. The full URL of the site or potentially dangerous file might also be sent to Google to help determine whether the site or file is harmful.
- Chrome uses Safe Browsing technology to scan your computer periodically, in order to detect unwanted software that prevents you from changing your settings or otherwise interferes with the security and stability of your browser. [Learn more](#). If this kind of software is detected, Chrome might offer you the option to download the [Chrome Cleanup Tool](#) to remove it.
- You can choose to send additional data to help improve Safe Browsing when you access a site that appears to contain malware or when Chrome detects unwanted software on your computer. [Learn more](#).
- If you use Chrome's password manager, Safe Browsing checks with Google when you enter any saved password on an uncommon page to protect you from phishing attacks. Chrome does not send your passwords to Google as part of this protection. In addition, Safe Browsing protects your Google Account password. If you enter it on a likely phishing site, Chrome will prompt you to change your Google Account password. If you sync your browsing history, or if you are signed in to your Google Account and choose to notify Google, Chrome will also flag your Google Account as likely phished.
- If you are signed in to your Google Account, Chrome will also warn you when you use a username and password that may have been exposed in a data breach. To check, when you sign in to a site, Chrome sends Google a partial hash of your username and other encrypted information about your password, and Google returns a list of possible matches from known breaches. Chrome uses this list to determine whether your username and password were exposed. Google does not learn your username or password, or whether they were exposed, as part of this process. This feature can be disabled in Chrome settings. [Learn more](#).
- On desktop and Android versions of Chrome, you can always choose to [disable the Safe Browsing feature within Chrome settings](#). On iOS versions of Chrome, Apple controls the Safe Browsing technology used by your device and may send data to Safe Browsing providers other than Google.

Privacy practices of apps, extensions, themes, services, and other add-ons

You can use apps, extensions, themes, services and other add-ons with Chrome, including some that may be preinstalled or integrated with Chrome. Add-ons developed and provided by Google may communicate with Google servers and are subject to the [Google Privacy Policy](#) unless otherwise indicated. Add-ons developed and provided by others are the responsibility of the add-on creators and may have different privacy policies.

Managing add-ons

Before installing an add-on, you should review the requested permissions. Add-ons can have permission to do various things, like:

- Store, access, and share data stored locally or in your Google Drive account
- View and access content on websites you visit
- Use notifications that are sent through Google servers

Chrome can interact with add-ons in a few different ways:

- Checking for updates
- Downloading and installing updates
- Sending usage indicators to Google about the add-ons

Some add-ons might require access to a unique identifier for digital rights management or for delivery of push messaging. You can disable the use of identifiers by removing the add-on from Chrome.

From time to time, Google might discover an add-on that poses a security threat, violates the developer terms for Chrome Web Store, or violates other legal agreements, laws, regulations, or policies. Chrome periodically downloads a list of these dangerous add-ons, in order to remotely disable or remove them from your system.

Server Log Privacy Information

Like most websites, our servers automatically record the page requests made when you visit our sites. These "server logs" typically include your web request, Internet Protocol address, browser type, browser language, the date and time of your request and one or more cookies that may uniquely identify your browser.

Here is an example of a typical log entry for where the search is for "cars" looks like this, followed by a breakdown of its parts:

123.45.67.89 - 25/Mar/2003 10:15:32 - https://www.google.com/search?q=cars - Firefox 1.0.7; Windows NT 5.1 - 740674ce2123e969

- 123.45.67.89 is the Internet Protocol address assigned to the user by the user's ISP. Depending on the user's service, a different address may be assigned to the user by their service provider each time they connect to the Internet.;
- 25/Mar/2003 10:15:32 is the date and time of the query.;
- https://www.google.com/search?q=cars is the requested URL, including the search query.;
- Firefox 1.0.7; Windows NT 5.1 is the browser and operating system being used.;
- 740674ce2123e969 is the unique cookie ID that was assigned to this particular computer the first time it visited a Google site. (Cookies can be deleted by users. If the user has deleted the cookie from the computer since the last time they've/s/he visited Google, then it will be the unique cookie ID assigned to their device the user the next time they/s/he visits Google from that particular computer).

More information

Information that Google receives when you use Chrome is used and protected under the [Google Privacy Policy](#). Information that other website operators and add-on developers receive, including [cookies](#), is subject to the privacy policies of those websites.

Google complies with certain [legal frameworks](#) relating to the transfer of data, such as the EU-US and Swiss-US Privacy Shield Framework. [Learn more.](#)

Key Terms

Cookies

A cookie is a small file containing a string of characters that is sent to your computer when you visit a website. When you visit the site again, the cookie allows that site to recognize your browser. Cookies may store user preferences and other information. You can configure your browser to refuse all cookies or to indicate when a cookie is being sent. However, some website features or services may not function properly without cookies. Learn more about [how Google uses cookies](#) and how Google uses data, including cookies, [when you use our partners' sites or apps](#).

Google Account

You may access some of our services by signing up for a [Google Account](#) and providing us with some personal information (typically your name, email address and a password). This account information is used to authenticate you when you access Google services and protect your account from unauthorized access by others. You can edit or delete your account at any time through your Google Account settings.

Follow us



Chrome Family

Other Platforms

Chromebooks

Chromecast

Chrome Cleanup Tool

Enterprise

Download Chrome Browser

Chrome Browser for Enterprise

Chrome Devices

Chrome OS

Google Cloud

G Suite

Education

Google Chrome Browser

Devices

Web Store

Dev and Partners

Chromium

Chrome OS

Chrome Web Store

Chrome Experiments

Chrome Beta

Chrome Dev

Chrome Canary

Stay Connected

Google Chrome Blog

Chrome Help

Google

[Privacy and Terms](#)

[About Google](#)

[Google Products](#)

[Help](#)

[English - United States](#)

[Learn more](#)

Ok, Got it

APPENDIX O

NEW ACCOUNT CREATION

AGREEMENT



Privacy and Terms

To create a Google Account, you'll need to agree to the [Terms of Service](#) below.

In addition, when you create an account, we process your information as described in our [Privacy Policy](#), including these key points:

Data we process when you use Google

- When you set up a Google Account, we store information you give us like your name, email address, and telephone number.
- When you use Google services to do things like write a message in Gmail or comment on a YouTube video, we store the information you create.
- When you search for a restaurant on Google Maps or watch a video on YouTube, for example, we process information about that activity – including information like the video you watched, device IDs, IP addresses, cookie data, and location.
- We also process the kinds of information described above when you use apps or sites that use Google services like ads, Analytics, and the YouTube video player.

Why we process it

We process this data for the purposes described in [our policy](#), including to:

- Help our services deliver more useful, customized content such as more relevant search results;
- Improve the quality of our services and develop new ones;
- Deliver personalized ads, depending on your account settings, both on Google services and on sites and apps that partner with Google;
- Improve security by protecting against fraud and abuse; and
- Conduct analytics and measurement to understand how our services are used. We also



You're in control of the data we collect & how it's used

have partners that measure how our services are used. [Learn more](#) about these specific advertising and measurement partners.

Combining data

We also combine this data among our services and across your devices for these purposes. For example, depending on your account settings, we show you ads based on information about your interests, which we can derive from your use of Search and YouTube, and we use data from trillions of search queries to build spell-correction models that we use across all of our services.

You're in control

Depending on your account settings, some of this data may be associated with your Google Account and we treat this data as personal information. You can control how we collect and use this data now by clicking "More Options" below. You can always adjust your controls later or withdraw your consent for the future by visiting My Account (myaccount.google.com).

More options ^

Customize your Google experience by confirming your personalization settings and the data stored with your account.

You can always learn more about these options, adjust them, and review your activity in your Google Account (account.google.com).

Web & App Activity

Saves your activity on Google sites and apps, including searches and associated info like location. Also saves activity from sites, apps, and devices that use Google services, including Chrome history. This helps Google provide better search results, suggestions, and personalization across Google services. Activity older than 18 months will be automatically deleted. You can change your auto-delete option, stop saving activity, or delete it manually at account.google.com.

☒ Save my Web & App Activity in my Google Account

☐ Don't save my Web & App Activity in my Google Account

[Learn more about Web & App Activity](#)

☐ **Ad personalization**

Google can show you ads based on your activity on Google services (such as Search or YouTube), and on websites and apps that partner with Google.

☒ Show me personalized ads

☐ Show me ads that aren't personalized

[Learn more about Ad personalization](#)

☐ **YouTube History**

Saves the YouTube videos you watch and the things you search for on YouTube. This helps Google give you better recommendations, remember where you left off, and more. Activity older than 36 months will be automatically deleted. You can change your auto-delete option, stop saving activity, or delete it manually at account.google.com.

☒ Save my YouTube History in my Google Account

☐ Don't save my YouTube History in my Google Account

These settings apply wherever you are signed in to your new Google Account.

☐ Send me occasional reminders about these settings

[Cancel](#)

[I agree](#)

APPENDIX P
CONSENT BUMP
AGREEMENT
AND FAQ PAGE

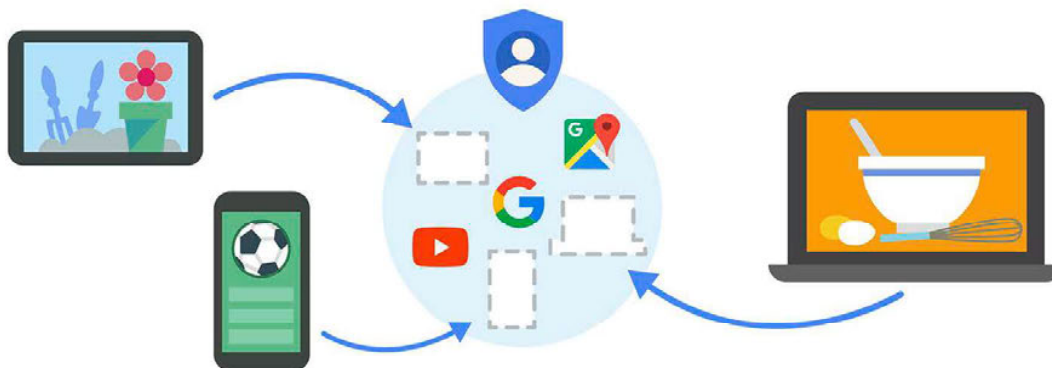


Some new features for your Google Account

We've introduced some optional features for your account, giving you more control over the data Google collects and how it's used, while allowing Google to show you more relevant ads.

What changes if you turn on these new features?

1. More information will be available in your *Google Account*, making it easier for you to review and control



When you use Google services like Search and YouTube, you generate data – things like what you've searched for and videos you've watched. You can find and control that data in *My Account* under the **Web & App Activity** setting.

With this change, this setting may also include browsing data from Chrome and activity from sites and apps that partner with Google, including those that show ads from Google.

2. Google will use this information to make ads across the web more relevant for you



In *My Account*, the **Ads Personalization** setting currently lets Google use data in your account to tailor ads that appear in Google products.

With this change, this setting will also let Google use data in your account to improve the relevance of ads on websites and apps that partner with Google.

These settings apply across all of your signed-in devices and across all Google services. You can change them any time in *My Account*. [Learn more](#) about these features, including how they affect shared devices.

What's still the same?

- Google does not sell your personal information to anyone
- You control the types of information we collect and use at *My Account* (myaccount.google.com)

Choose **I AGREE** to turn these features on or **MORE OPTIONS** for more choices.

[MORE OPTIONS](#)

[I AGREE](#)

More about these new features

We think these new features will make your Google experience better and we hope this page will help you decide what's right for you. Read on for more about the change and how it affects the data Google collects, your privacy settings, and the ads you see.

Why does Google collect data and where does it come from?

Data helps us make our services faster, smarter, and more useful for you. For example, when you allow Google Maps to know your location, it can show you the quickest way home.

Some of the data that Google collects comes from our own products and some of it comes from your visits to sites and apps that [partner with Google](#). These new features allow you to make more of this information visible in your *Google Account*, so your info is easier to review and control. The new features also expand our ability to make Google services better, including making the ads you see in Google products and across the web more relevant to you.

How does Google give you control over your information?

We created *MyAccount* (myaccount.google.com) to give you one central place where you can quickly access and manage your information. You also have easy-to-use settings there that allow you to decide how you want our services to work for you.

These new features introduce updates to two key privacy settings in your account:

- Your **Web & App Activity** setting lets you see and control data you generate when using Google services, like things you search for and search results you select. Google uses this data to improve your experience, including giving you better search results. If you turn on these new features, your *Web & App Activity* may also include browsing data from Chrome and activity from sites and apps that [partner with Google](#), including those that show ads from Google.
- Your **Ads Personalization** setting lets Google use data from your account, such as the searches you've done and your location, to make the ads we show you more relevant and useful. If you turn on these new features, Google can use that same data to improve the relevance of ads on sites and apps that partner with Google and across your signed-in devices.

If you decide not to turn on these new features, your settings and Google experience will stay the same.

What if you use more than one *Google Account* at the same time?

You can control your settings separately for each of your accounts. But if you use more than one account at the same time, Google applies the settings from your default account.

On the web, your default account is the first account you use each time you sign in to a new browser. On mobile devices, the default account depends on your operating system and the apps you use.

For example, if you sign in on the web with two different Google accounts, Google will use

For example, if you sign in on the web with two different Google accounts, Google will use *Web & App Activity* and *Ads Personalization* settings from the account you signed in to first, both to save data and to personalize your experience.

Why do ads matter and how does Google decide what ads to show?

Ads allow Google to offer Gmail, YouTube, Search, Maps, and many other services for free. When you use those services, our goal is to make the ads there as relevant for you as possible. The information in your *Google Account* helps us do that.

Ads also allow other sites and apps to offer their content for free. More than 2 million of them, likely many that you use, rely on Google to provide the ads they show. This change now makes it possible for us to use the same information in your *Google Account* to improve the ads we show you while you're signed in and visiting those sites and apps.

In more technical terms, instead of personalizing ads using a cookie ID for each of your devices, as we do today, this change makes it possible to use a single identifier associated with your account that gets used in Google products and across the web.

While we try to show you the best ads possible, we know we don't always get it right, and that's why you have ways to control the ads you see. For example, *Mute This Ad* lets you remove ads you don't find relevant. And with this change, your ads preferences work whenever you're signed in – across all Google products and on all your signed-in devices.

What do we mean by “websites and apps that partner with Google”?

Many websites and apps use Google technologies to improve their content and services. For example, a website might use our advertising services (like AdSense) or analytics tools (like partners who use Google Analytics to improve the ads they show).

As you use these sites, your web browser may send certain information to Google that may include the web address of the page that you're visiting, your IP address, or cookies previously set by the site or Google. In the case of mobile apps, this could also include the name of the app and an identifier that helps us to determine which ads we've served to other apps on your device.

The features described today don't change the types of data collected from these websites and apps – they simply change how that data is stored and used.

See the [Google Privacy Policy](#) for more information about what data we collect, why we collect it, and what we do with it.

EXHIBIT 2

**Redacted Version of
Document Sought to
be Sealed**

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**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

CHASOM BROWN, *et al*, individually
and on behalf of all others similarly
situated,

Plaintiffs,

v.

GOOGLE LLC,

Defendant.

Case No. 5:20-cv-03664-YGR

REBUTTAL REPORT OF PROFESSOR ON AMIR

MAY 20, 2022

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I. EXECUTIVE SUMMARY

1. Plaintiffs' expert Mr. Bruce Schneier provides numerous unsupported opinions about user expectations relating to private browsing mode. He fails to support his opinions with any context-specific empirical evidence, and ignores studies and research findings that private browsing users have disparate expectations, understandings, and preferences with regards to the purpose and functionality of private browsing modes. Instead, his opinions that all private browsing users have common expectations and preferences are either based on irrelevant anecdotes and general privacy principles and studies, or nothing at all. There are well-established methodologies for studying consumer expectations in specific contexts including those at issue here. Mr. Schneier applies none of those methodologies. Indeed, he appears to apply no methodology at all.
2. Plaintiffs' expert Mr. Mark Keegan presents survey results that are unreliable due to recall bias, a well-known problem in survey design and research, and fail to account for wide variation in browser and browser mode usage.
3. More specifically, based on my experience, the materials I reviewed in this matter, and the studies I designed and conducted in this case, I have reached the following opinions:

Amir Rebuttal Opinion 1 (See Section IV.A.1)

4. Mr. Schneier's opinion that "Google fails to disclose or provide notice of its data collection practices or provide users with effective privacy controls"¹ (Schneier Opinion 10) is not

¹ Expert Report of Bruce Schneier, *Chasom Brown, et al., Plaintiffs v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 4:20-cv-03664-YGR, April 15, 2022 ("Schneier Report"), Opinion 10, ¶ 1.

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supported by empirical evidence or research of actual private browsing mode users. On the contrary, as my Interpretation Study shows, only a small proportion of the respondents expect that Google *does not* receive URLs of the sites visited, IP addresses, or cookies placed on the browser, while in Incognito mode (Amir Affirmative Opinion 3).

Amir Rebuttal Opinion 2 (See Section IV.A.2)

5. Mr. Schneier’s conclusion that “the three documents that form the backbone of Google’s notification to Chrome users of its privacy policies are long, dense, and hard to read”² (Schneier Opinion 10) relies on the output from an online “readability” calculator. The analysis upon which Mr. Schneier bases his conclusion is overly simplistic and uninformative. Online readability calculators are nothing more than a mechanical way of counting a selected few features of a text (*e.g.*, number of characters, words, length of sentences, and average syllables per word), converted into a mathematical formula. It says nothing about actual consumer perceptions, and it fails to recognize that the Google Terms of Service, Google Privacy Policy, and Google Chrome Privacy Notice are as easy to read as, if not easier to read than, the privacy policies of other entities (*e.g.*, law firms representing Plaintiffs and digital rights groups), as well as articles authored by Mr. Schneier.

Amir Rebuttal Opinion 3 (See Section IV.B)

6. Mr. Schneier’s opinion that “Google offered ‘Incognito Mode’ in its Chrome browser in response to [...] market demand for the ability to browse the Internet without being monitored by advertisers, and [...] its branding and positioning of this feature created

² Schneier Report, ¶ 235.

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precisely that expectation”³ (Schneier Opinion 11) is based on speculation and is unsupported. He did not conduct any empirical analysis or research of actual private browsing mode users for the particular context of this matter.

7. To support his opinion, Mr. Schneier claims that “[p]airing the term “incognito” with an icon of a faceless person in disguise suggests that a user in Incognito mode cannot be seen, traced, or tracked while browsing online.”⁴ Contrary to Mr. Schneier’s claims, my Consumer Perceptions and Expectations Study finds that in the Chrome group (*i.e.*, those that viewed the image described by Mr. Schneier as “a faceless person in disguise”⁵), [REDACTED] of respondents expect that (i) companies that provide analytics and advertising services to websites visited, (ii) internet service providers, and (iii) companies that own the websites visited *do not* receive the data from their private browsing session (such as IP address, URLs of the sites visited, and cookies) (Amir Affirmative Opinion 2).

Amir Rebuttal Opinion 4 (See Section IV.B)

8. Without any empirical support, Mr. Schneier’s claims imply that all consumers share common expectations of what private browsing mode does and what data are collected when users are in private browsing mode. He makes blanket statements about user expectations, for example, users “reasonably expect to avoid the collection and retention of personal data”⁶ (Schneier Opinion 11) and “users have specifically signaled that they expect their browsing sessions and the associated content to be in fact private”⁷ (Schneier

³ Schneier Report, Opinion 11, ¶ 1.

⁴ Schneier Report, ¶ 283.

⁵ Schneier Report, ¶ 283.

⁶ Schneier Report, ¶ 261. I also note that it is unclear what constitutes “personal data” in Mr. Schneier’s claims.

⁷ Schneier Report, ¶ 86.

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Opinion 3). However, empirical results from my Consumer Perceptions and Expectations Study contradict Mr. Schneier’s claim that there is a common understanding or expectation across Class members. For example, when respondents in the Chrome group were asked “while in Incognito mode, do companies that provide analytics and advertising services to websites you visited during the session receive or not receive the data from your Incognito session (such as IP address, URLs of the sites you visit, and cookies),”⁸ (i) [REDACTED] of respondents in the Chrome group chose *do not* receive, (ii) [REDACTED] of respondents in the Chrome group chose *probably do not* receive, (iii) [REDACTED] of respondents in the Chrome group chose *uncertain*, (iv) [REDACTED] of respondents in the Chrome group chose *probably* receive, (v) [REDACTED] of respondents in the Chrome group chose *do* receive, and (vi) [REDACTED] of respondents in the Chrome group felt they did not have enough information to answer the question.

Amir Rebuttal Opinion 5 (See Section IV.C)

9. Mr. Schneier’s opinion that “Google’s disclosures give rise to a (false) expectation that private browsing mode prevents Google from collecting the private browsing information at issue”⁹ (Schneier Opinion 12) is unsupported. While his opinion is not backed by any empirical support, my Interpretation Study directly tested whether users expect Google to receive or to not receive certain types of data (*i.e.*, URLs of the sites visited, IP address, and cookies placed on browser) while in Incognito mode after reviewing various policies. Specifically, in my Interpretation Study, respondents reviewed the Incognito Splash Screen and “Learn More” page, and, depending on their experimental group, one of the following:

⁸ Expert Report of Professor On Amir, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, April 15, 2022 (“Amir Affirmative Report”), Appendix F.1.

⁹ Schneier Report, Opinion 12, ¶ 1.

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the Privacy Policy and Chrome Privacy Notice, the New Account Creation Agreement, or the Consent Bump Agreement. My Interpretation Study results show that only a small proportion of respondents gave responses that potentially support Mr. Schneier's claim that "Google's disclosures give rise to a reasonable expectation that Google will not collect users' private browsing information."¹⁰

10. Further, Mr. Schneier's unsupported statements regarding "a reasonable expectation" or what "[a] Chrome user would reasonably conclude" fail to recognize that consumers have different perceptions and expectations.¹¹ As the results of my Interpretation Study shows, contrary to Mr. Schneier's opinion, there is no common perception or expectation across the respondents.

Amir Rebuttal Opinion 6 (See Section IV.D)

11. Mr. Schneier's opinion that Google's policies "falsely communicated that Google would not collect information about users during their private browsing activities"¹² (Schneier Opinion 13) is unsupported. He makes several claims regarding consumer expectations and perception of the Incognito Splash Screen, including "the Splash Screen's statement that—'Chrome won't save [y]our browsing history' gives rise to a reasonable expectation that the user's Incognito browsing history will not be collected or saved by Google."¹³ None of Mr. Schneier's claims related to Schneier Opinion 13 are supported by empirical evidence or research involving actual users of any browser's private browsing mode (Incognito or

¹⁰ Schneier Report, ¶ 285.

¹¹ Schneier Report, ¶¶ 285-286.

¹² Schneier Report, Opinion 13, ¶ 1.

¹³ Schneier Report, ¶ 296.

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otherwise). In fact, these claims are contradicted by the results from my Interpretation Study. Specifically, only a small proportion of the respondents expect that Google *does not* receive (i) URLs of the sites they visit, (ii) IP addresses, and (iii) cookies placed on the browser while in Incognito mode.

12. Even if, for the sake of argument, Mr. Schneier's claim that "[t]he Splash Screen's omission of 'Google' from the list of entities to whom 'activity might still be visible' gives rise to a reasonable expectation that Google will not collect Incognito browsing activity"¹⁴ were true, my Likelihood of Use Study confirms that including Google on the list of entities to whom "activity might still be visible" has *no impact* on users' likelihood of using Chrome in Incognito mode (Amir Affirmative Opinion 4).

Amir Rebuttal Opinion 7 (See Section IV.E)

13. Mr. Schneier's opinions and claims regarding class members' expectations (Schneier Opinions 10, 11, 12, and 13) are not only contradicted by my empirical studies, but they are also inconsistent with findings from internal Google and public documents. Consistent with the findings from my Consumer Perceptions and Expectations Study and Interpretation Study, internal Google documents, including those cited by Mr. Schneier, and public documents also show that users generally understand that Google and other entities receive their data while they are in private browsing mode.

Amir Rebuttal Opinion 8 (See Section V.A)

14. In many of Mr. Schneier's claims regarding privacy, Mr. Schneier appears to further assume that "private" means completely concealed from everyone, including Google¹⁵

¹⁴ Schneier Report, ¶ 306.

¹⁵ Schneier Report, ¶¶ 24, 26, 297, and 301.

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(Schneier Opinions 1 and 13). However, privacy is not an all or nothing proposition, and many academic studies support that consumer understanding of terms, including “private,” varies and is context specific. The premise that a common meaning of “private” as related to internet browsing exists is inconsistent with academic literature that consumer preferences for privacy in online settings are varied and context-specific.

Amir Rebuttal Opinion 9 (See Section V.B)

15. Many of Mr. Schneier’s claims (for example, claims cited in Schneier Opinions 1, 2, 3, and 6) fail to acknowledge consumers’ preference of convenience and services, and that such preference differs across individuals and depends on the context. Such claims include, “trading privacy for services isn’t necessarily a good or fair bargain”¹⁶ (Schneier Opinion 6). Literature, including a book authored by Mr. Schneier, recognize that consumers are willing to trade some measures of privacy in exchange for benefits. But here, Mr. Schneier fails to acknowledge that many consumers, including some Plaintiffs, prefer personalized ads over non-personalized ads. The inconsistency between consumers’ stated preferences and the revealed preferences regarding privacy, or the so-called “privacy paradox,” can also be inferred from users’ browser choices. Even if Mr. Schneier’s unfounded claim that “[p]ublic concern about privacy has also escalated”¹⁷ were true, many consumers choose to not use web browsers that market themselves as privacy-oriented, such as a Brave browser or a Tor browser.

¹⁶ Schneier Report, ¶ 133.

¹⁷ Schneier Report, ¶ 64.

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Amir Rebuttal Opinion 10 (See Section V.C)

16. Mr. Schneier’s opinions regarding Google’s incentive of promoting itself as a “trustworthy guardian of privacy in order to sustain the user base that attracts advertisers to its platforms”¹⁸ (Schneier Opinions 1, 7, 8, 10, and 14) are speculative and inconsistent with fundamental marketing strategy. Mr. Schneier also claims that Google uses “dark patterns,”¹⁹ but he fails to identify any specific dark patterns as they pertain to either Google or private browsing modes at issue and prospective Class Members’ use of internet browsers. Mr. Schneier cites to three fines levied by the Commission Nationale de l’Informatique et des Libertés (“CNIL”).²⁰ Not only are those fines based on French standards that do not apply in the United States, but more importantly they do not relate to private browsing or data flow from visits to non-Google websites, the only conduct at issue here.²¹ Therefore, the CNIL’s fines cannot be extrapolated to make conclusions about data collection in the private browsing modes at issue.
17. Mr. Schneier fails to recognize that the long-term path to profitability for Google and other companies is to “do well by doing good,” a well-known strategy that is fundamental to marketing. Google has an incentive to create products that are beneficial for consumers, which in turn rewards Google through increased user base and user engagement.

¹⁸ Schneier Report, ¶ 43.

¹⁹ Schneier Report, ¶¶ 138 and 140.

²⁰ Schneier Report, ¶ 140.

²¹ One addresses creating a Google Account when setting up an Android mobile device, Schneier Report ¶ 140, and the other two relate to cookies placed while visiting Google websites, such as google.fr, Schneier Report ¶¶ 141-142.

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Amir Rebuttal Opinion 11 (See Section VI)

18. Mr. Keegan's survey is methodologically flawed because his survey questions are phrased in a way that makes them susceptible to recall bias, potentially causing respondents to overstate their usage of private browsing. Compared to my surveys, Mr. Keegan reports a larger share of respondents for several usage statistics (Keegan Opinion 3). For example, while my studies report that just [REDACTED] of Chrome users have used Incognito mode in the past six months, his study reports an estimate of 64% recall using Incognito mode. Mr. Keegan's survey also does not capture the heterogeneity of the frequency of Incognito use. Chrome users may use Incognito for specific, irregular tasks (such as buying a gift or booking a trip). Thus, his survey is not an appropriate method to assess actual usage of internet browsers, private browsing mode, or the prevalence of Google Account holders.

II. QUALIFICATIONS

19. I am the Wolfe Family Presidential Endowed Chair in Life Sciences, Innovation, and Entrepreneurship, and Professor of Marketing at the Rady School of Management, University of California, San Diego. I have been a professor of marketing for the past nineteen years. I received my PhD in Management Science and Marketing from the Massachusetts Institute of Technology in 2003. From 2003 to 2005, I was an Assistant Professor of Marketing at Yale University. In 2005, I moved to help found the Rady School of Management at UC San Diego, where I was the first founding member of the marketing department and have served as an associate dean of academic programs.
20. I have taught Marketing Management, Pricing, Consumer Behavior, Business Analytics, Marketing Strategy, Market Research, Applied Market Research, Lab to Market, and Data Driven Decision Making at the MBA and Executive levels, as well as many specific

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programs for major corporations (both nationally and internationally). I have also taught MBA Marketing Management courses at Northwestern University's Kellogg School of Management, Yale School of Management, Recanati School of Business of Tel Aviv University, IDC Herzelia, and Cheung Kong Graduate School of Business in Shanghai, China.

21. I have consulted with numerous companies in many industries on topics relating to market analysis, market research, business strategy, customer insights, branding, customer analysis, new product launches, pricing, promotions, and customer relationship management. I am also the Chief Behavioral Science Officer at Fiverr, Inc and serve on the advisory board of several companies.
22. I have published numerous highly cited and award-winning articles in leading marketing, management, and psychology journals, and I am often invited to lecture in leading business school and professional meetings. I have also designed and conducted hundreds of consumer surveys, both for my academic research and consulting work. My professional qualifications are described further in my curriculum vitae, which is attached as **Appendix A**.
23. I have also served as an expert witness in several cases, including consumer protection class actions. **Appendix B** lists matters where I have testified as an expert witness. I have also been retained on several cases that either settled or are ongoing.
24. My rate of compensation for this assignment is \$900 per hour. Individuals at Analysis Group, Inc., an economic and litigation consulting firm headquartered in Boston, Massachusetts, performed part of the work for this assignment under my direction. No compensation is contingent upon the outcome of this research or of the case.

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III. ASSIGNMENT

25. I understand that Plaintiffs Chasom Brown *et al.* (“Plaintiffs”) brought this case against Google LLC (“Google”).²² On April 15, 2022, I submitted the Expert Report of Professor On Amir (“Amir Affirmative Report”),²³ wherein I conducted a series of surveys specific to the facts of this matter to evaluate the understanding, perceptions, and expectations of users with respect to issues relevant to the matter.
26. I understand that two of Plaintiffs’ experts, Bruce Schneier and Mark Keegan, submitted reports on April 15, 2022 (“Schneier Report” and “Keegan Report”).²⁴ Mr. Schneier was retained by counsel for the Plaintiffs to “review documents and testimony and render opinions concerning issues of privacy and the alleged conduct[.] [His] analysis included issues relating to Google’s disclosures and practices, the private browsing modes at issue, reasonable privacy expectations, whether certain practices could be highly offensive or constitute a serious invasion of privacy, and issues relating to the value of privacy and user data.”²⁵ Mr. Keegan was retained by counsel for the Plaintiffs “to design and execute a survey to gauge certain aspects of prospective Class Members’ Internet browser use, private browsing mode use, and whether such individuals held a Google account during the time period relevant to this matter.”²⁶

²² Third Amended Complaint, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, February 3, 2022.

²³ Amir Affirmative Report.

²⁴ Schneier Report; Expert Report of Mark Keegan, *Chasom Brown, et al., Plaintiffs v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, April 15, 2022 (“Keegan Report”).

²⁵ Schneier Report, ¶ 2.

²⁶ Keegan Report, ¶ 7.

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27. In this report, I have been asked to review and respond to certain opinions presented in the Schneier Report and the Keegan Report. My failure to address any specific sentence or opinion in Mr. Schneier's or Mr. Keegan's reports does not mean that I agree with it, and no such agreement should be inferred.

IV. MR. SCHNEIER'S OPINIONS REGARDING CLASS MEMBERS' EXPECTATIONS ARE NOT SUPPORTED BY EMPIRICAL EVIDENCE

28. In his report, Mr. Schneier presents numerous anecdotes and stories that are not relevant to the facts of this case. Four of his overarching opinions relate to Class members' expectations and understanding of Incognito mode and Class members' expectations of Google's collection of private browsing data (Schneier Opinion 10, Schneier Opinion 11, Schneier Opinion 12, and Schneier Opinion 13). As I mentioned in the Amir Affirmative Report, any opinion related to consumer expectations and understanding must consider the context that generates the expectation and understanding, and therefore must be based on empirical evidence. Such evidence cannot be based on anecdotes; it must be acquired by observations collected systematically through a carefully designed research study. A well-designed study allows for full consideration of variations in consumer expectation and understanding across people, and accounts for differences that can depend on the context and situation. One or a few people's experience cannot and should not be generalized to a larger group. As I discussed in the Amir Affirmative Report, and as also acknowledged by Plaintiffs' expert Mr. Keegan, empirical studies must be obtained from properly designed studies that follow research guidelines and best practice.²⁷ However, Mr. Schneier did not

²⁷ See Amir Affirmative Report, footnote 12. See also, Keegan Report, ¶ 26.

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conduct any research, including empirical studies, tailored to the questions raised by Class members.²⁸ Instead, his argument appears to rely on anecdotal evidence — the experiences or observations from a few people in a limited and, in many instances, unrelated context — rendering his opinions in this case unreliable.

29. In fact, many of Mr. Schneier’s claims can and should be tested empirically. In the Amir Affirmative Report, I tested several of these claims using carefully designed studies specific to the facts of this matter. Specifically, in the Amir Affirmative Report, I conducted the following studies:

- a. **Consumer Perceptions and Expectations Study.** I designed and conducted my Consumer Perceptions and Expectations Study to assess whether and to what extent users expect that different types of entities receive or do not receive data (such as IP address, URLs of the sites users visit, and cookies) when they visit websites while in private browsing mode.²⁹ In this study, my target population consisted of 500 adults residing in the US who use a private browsing mode. Respondents were assigned to one of three groups (with a minimum of 200 respondents in the Chrome group, a minimum of 50 respondents in the Safari group, and a minimum of 50 respondents in the Firefox group) based on their answers to the screening question regarding the internet browser(s) they currently use to browse the internet. Respondents were then presented with the private browsing splash screens for Chrome, Safari, or

²⁸ I note that Mr. Schneier does not appear to have training or expertise in conducting research related to consumer expectations.

²⁹ See Amir Affirmative Report, Opinion 2 and Section VI.

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Firefox, as well as with the “Learn More” pages that are linked to the Chrome (for those in the Chrome group) and Firefox (for those in the Firefox group) private browsing splash screens. Respondents were asked to express their understanding of whether and to what extent the three enumerated entities receive or do not receive data (such as IP address, URLs of the sites visited, and cookies) when they visit websites while in private browsing mode. The types of entities were companies that provide analytics and advertising services to websites visited, internet service providers, or companies that own the websites visited.³⁰ Overall, respondents expect that companies that provide analytics and advertising services to websites visited, internet service providers, and companies that own the websites visited *receive* data from their private browsing session (such as IP address, URLs of the sites visited, and cookies).³¹

- b. **Interpretation Study.** I designed and conducted my Interpretation Study to assess whether and to what extent users expect Google to receive or to not receive URLs of the sites users visit, IP addresses, and cookies placed on users’ browsers during their Incognito session.³² In this study, my target population consisted of 1,000 adults residing in the US who use a private browsing mode.

³⁰ I am informed that Plaintiffs now allege that the private browsing modes at issue in this case are limited to the Chrome, Safari, and Edge/Internet Explorer browsers. While there are differences in the Splash Screen and Learn More pages across the Chrome, Safari, and Firefox browsers, overall, in my Consumer Perceptions and Expectations Study, more respondents across all three internet browsers expect that these entities “receive” or “probably receive” data from their private browsing session than respondents who expect that these entities “do not” or “probably do not” receive data. Given these results, there is no reason to believe that the overall results would differ if the Edge or Internet Explorer browser was tested instead of the Firefox browser.

³¹ Amir Affirmative Report, ¶ 5.

³² See Amir Affirmative Report, Opinion 3 and Section VII.

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Respondents were randomly assigned to one of four groups with a target of 250 respondents per group. All respondents were shown the Incognito Splash Screen and the “Learn More” page that is linked to the Incognito Splash Screen. Based on which group they were assigned to, respondents were also shown either no additional documents (Splash Screen Only group), the Google Privacy Policy and the Chrome Privacy Notice (with and without highlights) (Splash Screen with Policies (Highlighted) group), the New Account Creation Agreement (Splash Screen with New Account Creation Agreement group), or the Consent Bump Agreement and FAQ Page (Splash Screen with Consent Bump Agreement and FAQ Page). Each respondent was asked a series of three scale questions. These questions required respondents to express their understanding of whether Google receives or does not receive three types of data from their Incognito mode internet browsing session: URLs of the sites visited, IP addresses, and cookies placed on the browser. Overall, respondents expect that Google receives the URLs of the sites visited, IP addresses, and cookies placed on the browser while in Incognito mode.³³

- c. **Likelihood of Use Study.** I designed and conducted my Likelihood of Use Study to assess whether and to what extent modification of certain language on the Incognito Splash Screen and the “Learn More” page impacts users’ likelihood of using Chrome in Incognito mode for private browsing.³⁴ In this study, my target population consisted of 1,000 adults residing in the US who

³³ Amir Affirmative Report, ¶ 10.

³⁴ See Amir Affirmative Report, Opinion 4 and Section VIII.

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use a private browsing mode. I used a test/control experimental design, where respondents were randomly assigned to either the Actual Language group or the Alternative Language group, with a target of 500 respondents in each group. Because this survey is about users' actual behavior and because context matters, I presented a scenario to simulate the browsing experience. This scenario was the same across all respondents. This scenario asked respondents to imagine that they were researching online about a sensitive topic and they decided to browse the web in private browsing mode. Following the presentation of the scenario, respondents were shown either the actual version of the Incognito Splash Screen (Actual Language group), or the alternative version that modified certain language (Alternative Language group). Specifically, in the alternative version of the Incognito Splash Screen, the introductory sentence, "Now you can browse privately, and other people who use this device won't see your activity" was modified to say, "Now you can browse privately, which means other people who use this device won't see your activity." Similarly, under the heading, "Your activity might still be visible to," I added a bullet that stated: "Companies that provide services to websites you visit (such as Google Analytics, Adobe Analytics, Google Ad Manager, Facebook Ads)."³⁵ These language modifications address Plaintiffs' allegations as to how the actual language in the Incognito Splash Screen allegedly is misleading. Respondents that clicked the link to the "Learn More" page on the Incognito Splash Screen

³⁵ See Amir Affirmative Report, Appendices H.1 and H.2.

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saw either actual or alternative language depending on the condition to which they were assigned. After viewing the stimuli, respondents were asked how likely or unlikely they were to use the Chrome browser in Incognito mode to do online research on a sensitive topic. Overall, modifying certain language on the Incognito Splash Screen and the “Learn More” page (*i.e.*, the second phrase in the introductory sentence and information regarding the list of entities to which users’ activity might still be visible) to address Plaintiffs’ criticisms regarding what those documents *should* disclose *has no statistically significant impact* on respondents’ likelihood of using Chrome in Incognito mode to do online research on a sensitive topic.³⁶

30. As discussed in this section, Mr. Schneier’s unfounded opinions and claims are contradicted by the empirical findings from my studies, as well as by academic studies.

A. Mr. Schneier’s Opinion That Google Fails to Disclose Its Data Collection or Provide Users With Effective Privacy Controls Is Unsupported (Schneier Opinion 10)

1. Mr. Schneier’s Opinion That Google Fails to Disclose Its Data Collection or Provide Users With Effective Privacy Control Is Unsupported

31. Mr. Schneier’s Opinion 10 states:

[I]t is my opinion that Google fails to disclose or provide notice of its data collection practices or provide users with effective privacy controls, including with respect to the private browsing at issue in this lawsuit.³⁷

32. He also made the following claims regarding consumer expectations and perceptions of Google’s data collection practice.

³⁶ Amir Affirmative Report, ¶ 16.

³⁷ Schneier Report, Opinion 10, ¶ 1.

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Google’s efforts to feature “control” as one of the core principles for Google, both in its privacy policy and other public-facing documents, creates certain user expectations—including that Google respects user choices, and that users have the ability to stop Google’s collection, storage, and use of their data³⁸ (Schneier Opinion 10).

Google has repeatedly touted its efforts to make its records of individual users’ activity available to them and subject to their control. The “My Activity” page displays a user’s search history, browsing history, and history of videos watched on YouTube. The “Takeout” page enables signed-in users to download a file containing emails, ad clicks, location, uploaded documents, and physical activity data. The implication of providing these features is that the data expressly associated with a user’s account is all the data that Google has for that user. This reinforces the reasonable assumption that Google does not collect such data when users are not logged in and browsing in Incognito mode³⁹ (Schneier Opinion 10).

Paradoxically, when a user is logged out and is using Incognito’s “private browsing” mode, they have no control over the data that Google collects about them. Logged out users do not have access to Google’s privacy controls⁴⁰ (Schneier Opinion 10).

“Nudging” tactics included warnings that disabling ad personalization might also disable users’ ability to “mute” ads, which could lead some users to fear that video advertisements might blare away at their workplace if they didn’t click “Agree”—an understandable fear given the commonly understood definition of “mute” as “to deaden, soften, or muffle the sound of (a person or thing).” Google failed to explain in context its idiosyncratic definition of “mute” as the ability to control ads that they see—a definition that has nothing to do with volume....Testers who wished to delete their Location History were warned that “other apps” “may stop functioning properly,” with no explanation of what this really means; if they insisted on proceeding with the deletion, they were confronted with further warnings in red text, implying that the choice was a dangerous one⁴¹ (Schneier Opinion 10).

33. None of Mr. Schneier’s claims are supported by empirical evidence or research of actual private browsing mode users. In fact, the paragraphs listed above do not list any citations

³⁸ Schneier Report, ¶ 246.

³⁹ Schneier Report, ¶ 248.

⁴⁰ Schneier Report, ¶ 249.

⁴¹ Schneier Report, ¶ 251.

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in support of his claims about user expectations, assumptions, and implications. On the contrary, as my Interpretation Study shows (see further discussion in **Section IV.C** below), only a small proportion of the respondents expect that Google *does not* receive URLs of the sites visited, IP addresses, cookies placed on the browser, while in Incognito mode.⁴²

34. Furthermore, Mr. Schneier’s claims about Google’s purported tactics in making privacy controls not “privacy-friendly” are not supported by empirical evidence. Mr. Schneier cites to a 2018 study by Forbrukerrådet, the Norwegian Consumer Council, which “found that Google frequently employed default settings that were preselected to the least privacy-friendly options.”⁴³ However, the scope of this study does not relate to either the private browsing modes or the internet browser used by prospective Class Members. In fact, the study describes various design features of other Google, Facebook, and Microsoft services or features. For example, the study describes the design of the “Google Privacy Dashboard,” and assesses the ability for users to “delete their location data.”⁴⁴ But the Class excludes users who were signed into their Google Accounts while using a private browsing mode, so these settings are not applicable to the challenged practices here. Additionally, this study made conclusions about whether users are “nudged” based on a small sample of users who completed user tests without conducting a survey on a large, representative

⁴² See **Table 3**. See also, Amir Affirmative Report, Section VII.

⁴³ Schneier Report, ¶ 250. According to the study, “In order to test Google’s claim about the ease of deleting ‘specific items’ or ‘entire topics’, we attempted to delete all location data from a dummy Google account and two personal accounts. The user test was performed by clicking through to the privacy dashboard from the popup...” Forbrukerrådet (Norwegian Consumer Council), “Deceived by Design: How Tech Companies Use Dark Patterns to Discourage Us From Exercising Our Rights to Privacy,” June 27, 2018, available at <<https://perma.cc/SF8P-T255>>, accessed on May 17, 2022, (“Forbrukerrådet Study”), pp. 34-35.

⁴⁴ Forbrukerrådet Study, p. 35.

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sample. As such, results from this study cannot be used to assert claims regarding user expectations while in private browsing mode.

2. Mr. Schneier’s Automated Text Analyses of Google Policies Fail to Contextualize Google Policies Against Other Privacy Policies and Say Nothing About Consumer Perceptions of the Analyzed Google Policies

35. In Section 10.1 of his report, Mr. Schneier put the Google Terms of Service, Google Privacy Policy, and Google Chrome Privacy Notice an “online readability calculator.”⁴⁵ Based on the online readability calculator’s results, Mr. Schneier states that the Google Terms of Service, Google Privacy Policy, and Google Chrome Privacy Notice “are long, dense, and hard to read” without any assessment based on real-world consumer research.⁴⁶
36. The online readability calculator is nothing more than a mechanical way of counting a selected few features of a text (*e.g.*, number of characters, words, length of sentences, and average syllables per word), converted into a mathematical formula.⁴⁷ Different readability formulas make different assumptions, and they can yield different results—as shown by Mr. Schneier’s own analysis—making any such calculation unreliable. Further, because of the mechanical nature of such a calculator, a readability score can be used as a guide, but does not and cannot assess actual readers’ understanding of text.
37. He also estimates the number of hours to read the three Google policies, and states that “this estimated reading time assumes that the reader is capable of comprehending the text,

⁴⁵ Schneier Report, ¶¶ 233-234.

⁴⁶ Schneier Report, ¶ 235.

⁴⁷ Jarret, Caroline and Janice Redish, “Readability Formulas: 7 Reasons to Avoid Them and What to Do Instead,” July 29, 2019, *UXmatters*, available at <<https://perma.cc/FU9A-JV9L>>, accessed on May 12, 2022. *See also*, “Tip 6. Use Caution With Readability Formulas for Quality Reports,” May 2015, *Agency for Healthcare Research and Quality*, available at <<https://perma.cc/TM5Q-3MBJ>>, accessed on May 12, 2022.

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which in many cases is unlikely, unless that reader happens to be an attorney.”⁴⁸ His estimated reading time fails to recognize that the information in Google policies are organized by categories and topics. To gather relevant information, a reader does not need to read every single word of the Google policies. Further, his statement that many readers are unlikely to be “capable of comprehending the text [...] unless that reader happens to be an attorney” is not supported by any empirical evidence.⁴⁹ In fact, this statement contradicts Plaintiffs’ admissions that they read and understood Google’s Privacy Policy’s description of the data collection at issue in this case.⁵⁰ It also contradicts the Plaintiffs’ claim in the related Calhoun action that “[t]he Chrome [Privacy Notice] makes five uniform, unambiguous contractually binding promises in simple language that anyone can understand.”⁵¹

38. Moreover, Mr. Schneier fails to assess whether Google’s policies fall out of the normal range of the readability score of other privacy policies, or any other common type of text related to disclosures in online settings. **Table 1** below compares the readability scores of the three Google policies with the privacy policies of a selection of other entities (*e.g.*, law firms representing Plaintiffs and digital rights groups), as well as a selection of articles authored by Mr. Schneier. As shown in **Table 1**, using the same online calculator as used

⁴⁸ Schneier Report, ¶ 238.

⁴⁹ Schneier Report, ¶ 238.

⁵⁰ Zoom Videotaped Deposition of William Byatt, December 20, 2021 (“Byatt Deposition”), at 116:21-118:7, 120:11-122:18; Videotaped Deposition of Chasom Brown, Thursday, January 13, 2022 (“Brown Deposition”), at 112:3-22.

⁵¹ Plaintiffs’ Reply in Support of Motion for Class Certification and Appointment of Class Representatives and Class Counsel, *Patrick Calhoun, et al., Plaintiffs v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 4:20-cv-05146-YGR, February 16, 2022, Dkt. No. 484, p. 10.

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by Mr. Schneier, the readability scores of Google policies are comparable to, if not better than, those of the privacy policies of the selection of entities. For example, according to the Flesch Reading Ease score (scale from 1 to 100, with higher value being easier to read), Google policies are easier to read than the privacy policies of law firms representing Plaintiffs and organizations that Mr. Schneier is involved with, such as the Electronic Frontier Foundation and Access Now. In fact, according to the Flesch Reading Ease Score, Google policies are easier to read than some of Mr. Schneier's own articles. The Center for Plain Language also found that Google has the best-presented privacy policy among its competitors.⁵²

⁵² Steinmetz, Katy, "These Companies Have the Best (And Worst) Privacy Policies," August 6, 2015, *Time*, available at <<https://perma.cc/9QEY-EZG2>>, accessed on May 20, 2022.

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Table 1. Readability Scores of Google Policies and Other Selected Texts

	Gunning Fog ¹	Coleman Liau ²	Flesch Kincaid Grade ²	Automated Readability Index ²	SMOG ²	Flesch Reading Ease ³
Google Policies						
Google Terms of Service	12.24	11.33	12.14	11.20	13.56	42.54
Google Privacy Policy	14.01	12.67	13.32	12.89	13.89	36.63
Google Chrome Privacy Notice	14.05	11.83	13.43	13.78	13.66	41.97
Privacy Policies of Law Firms						
Boies Schiller Flexner LLP	16.55	13.11	14.78	14.55	15.69	31.29
Morgan & Morgan	16.19	14.15	14.56	13.57	15.40	25.69
Privacy Policies of Entities						
Electronic Frontier Foundation	17.19	12.61	15.76	15.73	15.85	30.40
Access Now	15.60	12.59	14.94	14.07	15.11	29.93
Mr. Schneier's Articles						
Why Was SolarWinds So Vulnerable to a Hack?	15.50	12.71	12.76	11.91	14.58	36.49
"Grassroots" Bot Campaigns Are Coming. Governments Don't Have a Plan to Stop Them.	13.66	12.94	11.75	11.44	13.36	40.96
The Solarwinds Hack is Stunning. Here's What Should Be Done.	14.61	12.44	12.33	11.61	14.04	39.23

Notes:

[1] The number displayed represents the years of formal education required for a person to easily understand the text on the first reading.

[2] The number displayed is the approximate representation of the U.S. grade level needed to comprehend the text.

[3] The number displayed is on a scale from 1-100, with lower scores being more difficult to read and higher scores being easier to read.

B. Mr. Schneier's Opinion That Google Creates an Expectation That Users Could Browse the Internet in Incognito Mode without Being Monitored by Advertisers Is Unsupported and Contradicted by My Consumer Perceptions and Expectations Study Results (Schneier Opinion 11)

39. Mr. Schneier's Opinion 11 states:

[I]t is my opinion that Google offered "Incognito Mode" in its Chrome browser in response to competitors' "private browsing" offerings and market demand for the ability to browse the Internet without being monitored by advertisers, and Google understood—and continues to understand—that its branding and positioning of this feature created precisely that expectation.⁵³

40. Mr. Schneier also makes claims, some in other parts of his report, regarding consumer perceptions and expectations for private browsing mode:

⁵³ Schneier Report, Opinion 11, ¶ 1.

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Pairing the term “incognito” with an icon of a faceless person in disguise suggests that a user in Incognito mode cannot be seen, traced, or tracked while browsing online⁵⁴ (Schneier Opinion 11).

Users who choose private browsing modes not only seek to shield their activity from the prying eyes of friends, family, and coworkers; they also reasonably expect to avoid the collection and retention of personal data⁵⁵ (Schneier Opinion 11).

Proposals included “building Incognito detection” into advertising products—a feature which, if implemented, would subvert one common goal of users who browse in Incognito mode—to browse without having one’s activity monitored by Google and its advertising customers⁵⁶ (Schneier Opinion 11).

And in the context of private browsing, users have specifically signaled that they expect their browsing sessions and the associated content to be in fact private⁵⁷ (Schneier Opinion 3).

When average citizens wake up in the morning, they don’t consider that they’re going to allow a bunch of unknown corporations to track them throughout the day; they just put their cell phone in their pocket and go about their business. It’s different when people use private browsing modes; when users choose private browsing, they are actually expressing their expectation of privacy⁵⁸ (Schneier Opinion 2).

Such incidents [of data leaks] provide important context for the expectations of users of private browsing modes [...] Now more than ever, people reasonably seek a refuge where they cannot be tracked, and Google capitalizes on those feelings by offering a private browsing mode⁵⁹ (Schneier Opinion 2).

Growing awareness of the amount of data produced by Internet users and collected by companies such as Google explains why users seek refuge in the promise and expectation of “going incognito” online⁶⁰ (Schneier Opinion 3).

⁵⁴ Schneier Report, ¶ 283.

⁵⁵ Schneier Report, ¶ 261.

⁵⁶ Schneier Report, ¶ 268.

⁵⁷ Schneier Report, ¶ 86.

⁵⁸ Schneier Report, ¶ 58.

⁵⁹ Schneier Report, ¶ 63.

⁶⁰ Schneier Report, ¶ 78.

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41. To support his opinions and claims, Mr. Schneier adopts an anecdotal, storytelling approach, that lacks sufficient support. He did not conduct any empirical analysis or research of actual private browsing mode users for the specific issue in this matter. Mr. Schneier also ignores internal Google studies that show users have many different reasons, rather than common reasons, for using private browsing modes.⁶¹ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]⁶² This study further undercuts Mr. Schneier's conclusions that the purported common reason for using private browsing mode is to prevent Google from receiving data.

42. Additionally, in my Consumer Perceptions and Expectations Study, respondents viewed the private browsing splash screens for Chrome, Safari, or Firefox, as well as the "Learn More" pages that are linked to the Chrome and Firefox private browsing splash screens.⁶³ Respondents were then asked to express their understanding of whether and to what extent the three enumerated entities receive or do not receive data (such as IP address, URLs of the sites visited, and cookies) when they visit websites while in private browsing mode. The types of entities were companies that provide analytics and advertising services to websites visited, internet service providers, or companies that own the websites visited.

⁶¹ For example, one study asked respondents [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] GOOG-BRWN-00477546-7604, at 7558.

⁶² GOOG-BRWN-00028191-8376, at 8327.

⁶³ Amir Affirmative Report, ¶¶ 3 and 51.

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43. Contrary to Mr. Schneier’s claims, my Consumer Perceptions and Expectations Study finds that in the Chrome group (*i.e.*, those that viewed the image described by Mr. Schneier as “a faceless person in disguise”⁶⁴), only a small proportion of respondents responded in a way that potentially supports his claim that consumers expect that “a user in Incognito mode cannot be seen, traced, or tracked while browsing online.”⁶⁵ As Table 2 of the Amir Affirmative Report shows (included in this report as **Table 2** below), [REDACTED] of respondents in the Chrome group expect that (i) companies that provide analytics and advertising services to websites visited, (ii) internet service providers, and (iii) companies that own the websites visited *do not* receive the data from their private browsing session (such as IP address, URLs of the sites visited, and cookies).⁶⁶
44. Also contrary to Mr. Schneier’s unsupported claims that users “reasonably expect to avoid the collection and retention of personal data”⁶⁷ and that “users have specifically signaled that they expect their browsing sessions and the associated content to be in fact private [from Google],”⁶⁸ my Consumer Perceptions and Expectations Study confirms that many users do not hold such expectations. As **Table 2** shows, [REDACTED] of respondents in the Chrome group expect that (i) companies that provide analytics and advertising services to websites visited, (ii) internet service providers, and (iii) companies that own the websites

⁶⁴ Schneier Report, ¶ 283.

⁶⁵ Schneier Report, ¶ 283.

⁶⁶ **Table 2**; Amir Affirmative Report, Tables 2 and 3. [REDACTED] of respondents in the Chrome group chose 1 on the scale for companies that provide analytics and advertising services to websites you visited, and even including those who chose 2, the proportion is [REDACTED] of respondents in the Chrome group chose 1 on the scale for internet service provider, and even including those who chose 2, the proportion is [REDACTED] of respondents in the Chrome group chose 1 on the scale for companies that own the websites you visited, and even including those who chose 2, the proportion is [REDACTED]

⁶⁷ Schneier Report, ¶ 261. I also note that it is unclear what constitutes “personal data” in Mr. Schneier’s claims.

⁶⁸ Schneier Report, ¶ 86.

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visited *probably do* or *do* receive the data from their private browsing session (such as IP address, URLs of the sites visited, and cookies).⁶⁹ According to an internal Google document that Mr. Schneier cites in his report, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]⁷⁰

45. Moreover, without any empirical support, Mr. Schneier’s claims imply that all consumers share the same expectations of what private browsing mode does and what data are collected in private browsing mode. He makes blanket statements about user expectations, for example, the claims discussed in the paragraph above asserting that users “reasonably expect to avoid the collection and retention of personal data”⁷¹ and “users have specifically signaled that they expect their browsing sessions and the associated content to be in fact private.”⁷² Indeed, like the results of the Google studies cited above in paragraph 41, the empirical results from my Consumer Perceptions and Expectations Study contradict Mr. Schneier’s claim that there is a common understanding or expectation across Class members. For example, when asked “while in Incognito mode, do companies that provide analytics and advertising services to websites you visited receive or not receive the data from your Incognito session (such as IP address, URLs of the sites you visit, and cookies),”

⁶⁹ **Table 2;** Amir Affirmative Report, Tables 2 and 3 [REDACTED] of respondents in the Chrome group chose 4 or 5 on the scale for companies that provide analytics and advertising services to websites you visited. [REDACTED] of respondents in the Chrome group chose 4 or 5 on the scale for internet service provider. [REDACTED] of respondents in the Chrome group chose 4 or 5 on the scale for companies that own the websites you visited.

⁷⁰ Schneier Report, ¶ 289, footnote 317. *See also*, GOOG-BRWN-00477510-7537, at 7514.

⁷¹ Schneier Report, ¶ 261. I also note that it is unclear what constitutes “personal data” in Mr. Schneier’s claims.

⁷² Schneier Report, ¶ 86.

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(i) [REDACTED] of respondents in the Chrome group chose *do not* receive, (ii) [REDACTED] of respondents in the Chrome group chose *probably do not* receive, (iii) [REDACTED] of respondents in the Chrome group chose *uncertain*, (iv) [REDACTED] of respondents in the Chrome group chose *probably* receive, (v) [REDACTED] of respondents in the Chrome group chose *do* receive, and (vi) [REDACTED] of respondents in the Chrome group felt they did not have enough information to answer the question.⁷³ Thus [REDACTED] of respondents in the Chrome group expect that companies that provide analytics and advertising services to websites visited *probably* receive or *do* receive the data from users' Incognito session.⁷⁴

⁷³ **Table 2;** Amir Affirmative Report, Table 2.

⁷⁴ **Table 2;** Amir Affirmative Report, Tables 2 and 3.

“While in [MODE NAME] mode, does [TYPE OF ENTITY] receive or not receive the data from your [MODE NAME] session (such as IP address, URLs of the sites you visit, and cookies)?”

5 = "[TYPE OF ENTITY] does receive the data from my [MODE NAME] session")

	2017	2018	2019	2020
Overall				
1. Healthcare	100%	100%	100%	100%
2. Education	100%	100%	100%	100%
3. Environment	100%	100%	100%	100%
4. Economy	100%	100%	100%	100%
5. Society	100%	100%	100%	100%
6. Technology	100%	100%	100%	100%
7. Culture	100%	100%	100%	100%
8. Politics	100%	100%	100%	100%
9. Law	100%	100%	100%	100%
10. Science	100%	100%	100%	100%
11. Art	100%	100%	100%	100%
12. Sports	100%	100%	100%	100%
13. Religion	100%	100%	100%	100%
14. History	100%	100%	100%	100%
15. Geography	100%	100%	100%	100%
16. Mathematics	100%	100%	100%	100%
17. Physics	100%	100%	100%	100%
18. Chemistry	100%	100%	100%	100%
19. Biology	100%	100%	100%	100%
20. Psychology	100%	100%	100%	100%
21. Sociology	100%	100%	100%	100%
22. Anthropology	100%	100%	100%	100%
23. Archaeology	100%	100%	100%	100%
24. Linguistics	100%	100%	100%	100%
25. Philosophy	100%	100%	100%	100%
26. Metaphysics	100%	100%	100%	100%
27. Logic	100%	100%	100%	100%
28. Mathematics	100%	100%	100%	100%
29. Physics	100%	100%	100%	100%
30. Chemistry	100%	100%	100%	100%
31. Biology	100%	100%	100%	100%
32. Psychology	100%	100%	100%	100%
33. Sociology	100%	100%	100%	100%
34. Anthropology	100%	100%	100%	100%
35. Archaeology	100%	100%	100%	100%
36. Linguistics	100%	100%	100%	100%
37. Philosophy	100%	100%	100%	100%
38. Metaphysics	100%	100%	100%	100%
39. Logic	100%	100%	100%	100%
40. Mathematics	100%	100%	100%	100%
41. Physics	100%	100%	100%	100%
42. Chemistry	100%	100%	100%	100%
43. Biology	100%	100%	100%	100%
44. Psychology	100%	100%	100%	100%
45. Sociology	100%	100%	100%	100%
46. Anthropology	100%	100%	100%	100%
47. Archaeology	100%	100%	100%	100%
48. Linguistics	100%	100%	100%	100%
49. Philosophy	100%	100%	100%	100%
50. Metaphysics	100%	100%	100%	100%
51. Logic	100%	100%	100%	100%
52. Mathematics	100%	100%	100%	100%
53. Physics	100%	100%	100%	100%
54. Chemistry	100%	100%	100%	100%
55. Biology	100%	100%	100%	100%
56. Psychology	100%	100%	100%	100%
57. Sociology	100%	100%	100%	100%
58. Anthropology	100%	100%	100%	100%
59. Archaeology	100%	100%	100%	100%
60. Linguistics	100%	100%	100%	100%
61. Philosophy	100%	100%	100%	100%
62. Metaphysics	100%	100%	100%	100%
63. Logic	100%	100%	100%	100%
64. Mathematics	100%	100%	100%	100%
65. Physics	100%	100%	100%	100%
66. Chemistry	100%	100%	100%	100%
67. Biology	100%	100%	100%	100%
68. Psychology	100%	100%	100%	100%

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C. Mr. Schneier’s Opinion That Google’s Policies Give Rise to an Expectation That Private Browsing Mode Prevents Google from Collecting At-Issue Data Is Unsupported and Contradicted by My Interpretation Study Results (Schneier Opinion 12)

46. Mr. Schneier’s Opinion 12 states:

[I]t is my opinion that Google’s disclosures give rise to a (false) expectation that private browsing mode prevents Google from collecting the private browsing information at issue in this lawsuit.⁷⁵

47. Mr. Schneier made several claims regarding consumer understanding and interpretation of Google’s policies:

Google’s disclosures give rise to a reasonable expectation that Google will not collect users’ private browsing information⁷⁶ (Schneier Opinion 12).

Public statements by Google’s own executives reinforce the perception that Chrome Incognito mode provides privacy not only from unspecified others but from Google itself. In September 2014, Google CEO Eric Schmidt publicly stated that “Google allows you to delete the information that we know about you and in fact, Google is so concerned about privacy that you could in fact, if you’re using Chrome for example, you can browse in what is called ‘incognito mode’ where no one sees anything about you.” A Chrome user would reasonably conclude that “no one” would include Google⁷⁷ (Schneier Opinion 12).

None of these Google documents notified users (or anyone else) of Google’s collection, storage, and use of private browsing information, including the collection of the private browsing information of users who visit non-Google websites without being signed-in to any Google account. While these Google documents include some high-level disclosures regarding Google’s practices, none of them provided notice that Google would be engaging in the collection of data from users’ private browsing activities. To the contrary, throughout these documents, Google represented that users were in control of the data that Google collects and uses, and that users could exercise control through private browsing mode—without Google’s surveillance⁷⁸ (Schneier Opinion 12).

⁷⁵ Schneier Report, Opinion 12, ¶ 1.

⁷⁶ Schneier Report, ¶ 285.

⁷⁷ Schneier Report, ¶ 286.

⁷⁸ Schneier Report, ¶ 277.

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48. To support his opinions and claims, Mr. Schneier tells stories and cites to various documents (*e.g.*, internal Google documents, deposition transcripts, and public documents), none of which are empirical evidence or research of actual private browsing mode users for the specific issue in this matter. Additionally, Mr. Schneier has not conducted any empirical research or survey to understand consumers' expectations, understanding, or interpretation of Google policies. Mr. Schneier also ignores Google documents and studies that contradict his opinions.⁷⁹
49. In fact, my Interpretation Study directly tested whether users expect Google to receive or to not receive certain types of data (*i.e.*, URLs of the sites visited, IP addresses, and cookies placed on the browser) while in Incognito mode after reviewing various policies. Specifically, in my Interpretation Study, respondents reviewed the Incognito Splash Screen and "Learn More" page, and, depending on their experimental group, one of the following: the Privacy Policy and Chrome Privacy Notice, the New Account Creation Agreement, or the Consent Bump Agreement.⁸⁰ My Interpretation Study results show that only a small proportion of respondents gave responses that potentially support Mr. Schneier's claim that "Google's disclosures give rise to a reasonable expectation that Google will not collect users' private browsing information."⁸¹ As Table 5 of the Amir Affirmative Report shows (included in this report as **Table 3** below), only [REDACTED] of respondents expect that Google *does not* receive URLs of the sites visited while in Incognito mode, only [REDACTED] to

⁷⁹ For example, one study found that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] GOOG-BRWN-000156752-6824, at 6793 and 6802.

⁸⁰ Amir Affirmative Report, ¶¶ 8 and 63.

⁸¹ Schneier Report, ¶ 285.

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████ of respondents expect that Google *does not* receive IP addresses while in Incognito mode, and █████ of respondents expect that Google *does not* receive cookies placed on the browser while in Incognito mode.⁸²

50. Further, Mr. Schneier’s unfounded statements regarding “a reasonable expectation” or what “[a] Chrome user would reasonably conclude” fail to recognize that consumers have different perceptions and expectations. As the results of my Interpretation Study show, contrary to Mr. Schneier’s opinion, there is no common perception or expectation across respondents. For example, after seeing the Incognito Splash Screen, “Learn More” page, Google Privacy Policy, and Chrome Privacy Notice (*i.e.*, in the Splash Screen with Policies (Highlighted) group), when asked to “select one of the following regarding URLs of the sites you visit during an Incognito mode internet browsing session,” █████ of respondents expect that “Google does not receive this information,” █████ expect that “Google probably does not receive this information,” █████ believe that “It is uncertain whether Google receives this information or not,” █████ expect that “Google probably receives this information,” █████ expect that “Google does receive this information,” and █████ feel they do not have enough information to answer this question.⁸³ Thus █████ of respondents in the “Splash Screen with Policies (Highlighted)” group expect that Google *probably* receives or *does* receive URLs of the sites visited during an Incognito mode browsing session.⁸⁴

⁸² **Table 3;** Amir Affirmative Report, Tables 5 and 6. Even including respondents who answered *probably does not* receive, only █████ of respondents expect that Google *does not* or *probably does not* receive (1 or 2 on the scale) URLs of the sites visited while in Incognito mode. Only █████ of respondents expect that Google *does not* or *probably does not* receive (1 or 2 on the scale) IP addresses while in Incognito mode. █████ of respondents expect that Google *does not* or *probably does not* receive (1 or 2 on the scale) cookies placed on the browser while in Incognito mode.

⁸³ **Table 3;** Amir Affirmative Report, Table 5.

⁸⁴ **Table 3;** Amir Affirmative Report, Tables 5 and 6.

“Based on the screens that you reviewed, please select one of the following regarding [DATA TYPE] during an Incognito mode internet browsing session (e.g., watching a video or shopping for a product):”

5 = "Google does receive this information")

Source: Amir Affirmative Report, Table 5.

D. Mr. Schneier's Opinion That Google's Policies Give Consumers a False Expectation That Google Does Not Collect Information about Users While in Private Browsing Mode Is Unsupported and Contradicted by Results from My Empirical Studies (Schneier Opinion 13)

51. Mr. Schneier's Opinion 13 states:

[I]t is my opinion that Google employees, documentation, and disclosures throughout the class period and across all class members falsely communicated that Google would not collect information about users during their private browsing activities on non-Google websites.”⁸⁵

52. He also made the following claims regarding consumer expectations and perception of the Incognito Splash Screen.

Therefore, the Splash Screen's statement that—“Chrome won't save [y]our browsing history” gives rise to a reasonable expectation that the user's Incognito browsing history will not be collected or saved by Google⁸⁶ (Schneier Opinion 13).

In addition, Google's use of the term “private” to describe Chrome's Incognito mode gives rise to a reasonable expectation not just that a user's Incognito browsing will not be discoverable by other users of a device, but also that the browsing will not be collected and surveilled by Google⁸⁷ (Schneier Opinion 13).

In a May 4, 2015, internal Google spreadsheet defining and discussing various terms in relation to their products, “Privacy” is defined as “what you share or don't share with other users; what you store or don't store with Google.” This demonstrates that even Google realized that when they make a statement to their users like “now you can browse the web privately,” it would lead a reasonable user to think it prevents Google from storing their browsing data⁸⁸ (Schneier Opinion 13).

[I]n connection with Incognito mode, people would think “privacy” would include privacy from Google unless otherwise stated⁸⁹ (Schneier Opinion 13).

⁸⁵ Schneier Report, Opinion 13, ¶ 1.

⁸⁶ Schneier Report, ¶ 296.

⁸⁷ Schneier Report, ¶ 297.

⁸⁸ Schneier Report, ¶ 298.

⁸⁹ Schneier Report, ¶ 299.

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Using “incognito” to characterize a mode of web browsing would lead a reasonable user to assume that by using it, they would remain unidentifiable and untracked⁹⁰ (Schneier Opinion 13).

The word “privately” in this context would be understood by a reasonable consumer to mean “freedom from unwelcome observation,” including observation by Google⁹¹ (Schneier Opinion 13).

Additionally, the nonverbal, visual imagery incorporated into the Incognito splash page—the black background and the black-on-grey, black-hatted “Spy Guy” icon—invokes secrecy and the cover of darkness, and reinforces the inaccurate impression that the users may go about their business without being tracked by Google⁹² (Schneier Opinion 13).

Incognito mode’s simple, bold, and friendly “Spy Guy” may communicate Google’s “intent” to lead users to believe that Incognito will provide them with a virtual cover of darkness, but is inaccurate and misleading regarding Incognito’s actual functionality, in which their activity continues to be monitored. Reasonable users conducting purportedly “private” online investigations while in Incognito mode would be surprised and dismayed to learn that the “Spy Guy” is always being tailed by Google itself⁹³ (Schneier Opinion 13).

The Splash Screen’s omission of “Google” from the list of entities to whom “activity might still be visible” gives rise to a reasonable expectation that Google will not collect Incognito browsing activity⁹⁴ (Schneier Opinion 13).

[N]o reasonable user would interpret Google’s disclosures as permitting the collection of their private browsing information⁹⁵ (Schneier Opinion 13).

[I]t is reasonable that users would expect that their choice of Incognito mode would protect browsing activity that they regarded as confidential from being discerned by anyone, including Google⁹⁶ (Schneier Opinion 13).

Certainly, the word “private” would not predispose a user to assume that Google continues to peer over their shoulders, harvesting information from that private

⁹⁰ Schneier Report, ¶ 300.

⁹¹ Schneier Report, ¶ 301.

⁹² Schneier Report, ¶ 301.

⁹³ Schneier Report, ¶ 302.

⁹⁴ Schneier Report, ¶ 306.

⁹⁵ Schneier Report, ¶ 307.

⁹⁶ Schneier Report, ¶ 316.

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browsing so that it can be used by Google for its financial benefit and possible served up by Google to third parties unknown to them who seek to gain insight into their personal lives⁹⁷ (Schneier Opinion 13).

In mid-2020, Google began blocking third-party cookies within Incognito, updating the Splash Screen to include a toggle to “block third-party cookies.” The Splash Screen states that, when this toggle is switched on, “sites can’t use cookies that track you across the web.” A reasonable user would interpret this feature to mean that switching it “on” would prevent Google from tracking users across the web, since Google cookies would presumably be third-party cookies when used on non-Google websites⁹⁸ (Schneier Opinion 13).

Google’s persistence in collecting, storing, and using private browsing information, notwithstanding its detailed knowledge of users’ misconceptions of the protection afforded by the ostensibly “private” Incognito mode, is highly offensive because it constitute a serious invasion of users’ privacy for economic gain and an abuse of people’s trust in moments where they are most vulnerable, and moments where they seek refuge in privacy⁹⁹ (Schneier Opinion 13).

53. Mr. Schneier’s opinion that “Google employees, documentation, and disclosures throughout the class period and across all class members falsely communicated that Google would not collect information about users during their private browsing activities on non-Google websites”¹⁰⁰ assumes that such communications, had they reached consumers in the first place, would create a false impression in consumers’ minds. But none of Mr. Schneier’s claims are supported by empirical evidence or research involving actual users of private browsing mode. In fact, they are contradicted by the results from my Interpretation Study. Specifically, only a small proportion of the respondents expect that

⁹⁷ Schneier Report, ¶ 317.

⁹⁸ Schneier Report, ¶ 356.

⁹⁹ Schneier Report, ¶ 365.

¹⁰⁰ Schneier Report, ¶ 1.

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Google *does not* receive (i) URLs of the sites they visit, (ii) IP addresses, and (iii) cookies placed on the browser while in Incognito mode.¹⁰¹

54. Further, Mr. Schneier’s claims that the imagery surrounding Incognito mode leads users to have certain perceptions is unsupported. In fact, literature found that the meaning and impression invoked by imagery is highly dependent on the context, such as packaging features of products, demographics of the audience, and culture of the audience.¹⁰² For example, the color red is shown to be associated with the tomato flavor for potato chips.¹⁰³ Whereas in the context of online bidding, the color red is shown to be associated with increased aggression.¹⁰⁴ Similarly, the color black can also be associated with different emotions and elicit different perceptions depending on context. Mr. Schneier did not conduct any empirical, context-specific analysis to assess whether the Splash Screen invokes “secrecy and the cover of darkness.”¹⁰⁵
55. Even if, for the sake of argument, Mr. Schneier’s claim that “[t]he Splash Screen’s omission of ‘Google’ from the list of entities to whom ‘activity might still be visible’ gives

¹⁰¹ See **Table 3**. See also, Amir Affirmative Report, Section VII.

¹⁰² See Bahrainizad, Manijeh and Azadeh Rajabi, “Consumers’ Perception of Usability of Product Packaging and Impulse Buying: Considering Consumers’ Mood and Time Pressure as Moderating Variables,” *Journal of Islamic Marketing*, Vol. 9, No. 2, 2018, pp. 262-282; Sliburyte, Laimona and Ilona Skeryte, “What We Know about Consumers’ Color Perception,” *Procedia - Social and Behavioral Sciences*, 2014, pp. 468-472, pp. 468 and 471; Wu, Jinnan, et al., “Effect of Online Product Presentation on the Purchase Intention of Wearable Devices: The Role of Mental Imagery and Individualism-Collectivism,” *Frontiers in Psychology*, 2020, pp. 1-14, p. 1; Amsteus, Martin, et al., “Colors in Marketing: A Study of Color Association and Context (in) Dependence,” *International Journal of Business and Social Science*, Vol. 6, No. 3, 2015, pp. 32-45, p. 32. See also, Crowley, Aye E., “The Two-Dimensional Impact of Color on Shopping,” *Marketing Letters*, 1993, pp. 59-69.

¹⁰³ Velasco, Carlos, et al., “The Context of Colour-Flavour Associations in Crisps Packaging: A Cross-Cultural Study Comparing Chinese, Colombian, and British Consumers,” *Food Quality and Preference*, 2014, pp. 49-57, pp. 49 and 54. While authors were able to find some cross-cultural color-flavor associations, many vary.

¹⁰⁴ Bagchi, Rajesh and Amar Cheema, “The Effect of Red Background Color on Willingness-to-Pay: The Moderating Role of Selling Mechanism,” *Journal of Consumer Research*, Vol. 35, No. 5, 2013, pp. 947-960, pp. 947 and 955.

¹⁰⁵ Schneier Report, ¶ 301.

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rise to a reasonable expectation that Google will not collect Incognito browsing activity”¹⁰⁶ were true, my Likelihood of Use Study confirms that including Google on the list of entities to whom “activity might still be visible” has *no impact* on users’ likelihood of using Chrome in Incognito mode. In my Likelihood of Use Study, respondents viewed the Incognito Splash Screen and for some respondents, the “Learn More” page, with either Actual or Alternative Language. The Alternative Language included modification of certain language on the Incognito Splash Screen and the “Learn More” page that address Plaintiffs’ criticisms of those documents—namely, that these documents should have identified Google as an entity that may receive data when an Incognito user visits a website using Google services.¹⁰⁷ My results show that modifying this language (*i.e.*, mentioning Google on the Incognito Splash Screen and the “Learn More” page) *has no statistically significant impact* on respondents’ likelihood of using Chrome in Incognito.¹⁰⁸

E. Mr. Schneier’s Opinions and Claims Regarding Class Members’ Expectations are Not Consistent with Internal Google and Public Documents

56. Mr. Schneier’s opinions and claims regarding class members’ expectations, as discussed above, are not only contradicted by my empirical studies, but they are also inconsistent with findings from internal Google and public documents.¹⁰⁹ Consistent with the findings from my Consumer Perceptions and Expectations Study and Interpretation Study, these

¹⁰⁶ Schneier Report, ¶ 306.

¹⁰⁷ Amir Affirmative Report, ¶¶ 13 and 75.

¹⁰⁸ Amir Affirmative Report, ¶¶ 16 and 83.

¹⁰⁹ Mr. Schneier made claims regarding personal data and privacy. *See* Schneier Report, Opinions 10, 11, 12, and 13, ¶ 1. I note that the definition of personal data and privacy is context specific, and the definition varies across studies.

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documents also show that users generally understand that Google and other entities receive their data while they are in private browsing mode.

57. Internal Google documents show that Chrome users understand their data is being collected, and they are also aware of the benefits and have become accustomed to data collection for enhanced performance and personalized ads.¹¹⁰ Consumer preference and benefits are context specific and vary by individual. For example, in research conducted by Google (and cited by Mr. Schneier), one respondent noted that Google Chrome “cares about the user experience, getting a local restaurant recommendation, so they take the data but you get something back.”¹¹¹ Another seemed pleased with the customized suggestion from Google that ““Why don’t you go here with your dog.””¹¹² Another respondent acknowledged, “I have an advantage because Google offers nice tools, maps and other things. I have a benefit - we must be aware all of us that we pay with our data.”¹¹³
58. Additionally, the public sources that Mr. Schneier cited make clear that the public is generally aware that Incognito mode does not provide complete privacy as users browse the web. For example, a 2019 article by Laurie Clarke in the popular magazine *Wired*, cited in Mr. Schneier’s report, acknowledged “the long-known fact that Incognito isn’t truly anonymous” and that “new research has *re-emphasised that Google and other web browsers are still tracking you in privacy mode, even on the most sensitive of sites*”

¹¹⁰ GOOG-CABR-00422093-2182, at 2098, 2099, and 2102.

¹¹¹ GOOG-BRWN-00156752-6824, at 6782.

¹¹² GOOG-BRWN-00156752-6824, at 6782.

¹¹³ GOOG-BRWN-00156752-6824, at 6782.

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(emphasis added).¹¹⁴ The article also says that “Google doesn’t claim that incognito is a catch-all security salve.” Rather, private browsing modes “are short-term options that can limit what’s recorded on one machine - not an all-encompassing way to be private online. The main functionality of incognito mode is not saving cookies or browser history on the hard disc, meaning that private browsing sessions are isolated from normal ones.” Ms. Clark further recognizes that “[i]n incognito mode, your data is tracked in exactly the same way as normal mode. ‘The difference is that in ordinary circumstances, trackers are unable to link a ‘private browsing’ session with the ‘normal session.’[...] ‘This means that in principle, after the user closes the browser window no trace should be left.’”¹¹⁵

V. MR. SCHNEIER’S OPINIONS REGARDING PRIVACY ARE WITHOUT BASIS AND CONTRADICTED BY EMPIRICAL EVIDENCE

59. In addition to the unsupported opinions regarding consumer expectations discussed in **Section IV**, Mr. Schneier made various claims in his opinions regarding privacy that are also without basis and are not consistent with available empirical evidence and academic literature.

A. Mr. Schneier’s Premise That There Exists a Common Meaning of Privacy Is Unfounded and is Inconsistent with Academic Literature that Consumer Preferences for Privacy are Context-Specific

60. Mr. Schneier cites the Oxford English Dictionary for the definition of “privacy” and “private,” and discusses the importance of privacy from political, business, and historical

¹¹⁴ Clarke, Laurie, “Google Chrome’s Incognito Mode is Way Less Private Than You Think,” July 20, 2019, *Wired*, available at <<https://perma.cc/2HGJ-GWHN>>, accessed on May 12, 2022 (“Clarke (2019)”).

¹¹⁵ Clarke (2019).

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perspectives.¹¹⁶ By using the term “privacy” loosely across such a wide spectrum of contexts and topics, Mr. Schneier assumes that a common, universal meaning of “privacy” or “private” exists that can be applied simplistically to any context. For example, Mr. Schneier makes the following claims:

In addition, Google’s use of the term “private” to describe Chrome’s Incognito mode gives rise to a reasonable expectation not just that a user’s Incognito browsing will not be discoverable by other users of a device, but also that the browsing will not be collected and surveilled by Google”¹¹⁷ (Schneier Opinion 13).

The word “privately” in this context would be understood by a reasonable consumer to mean “freedom from unwelcome observation,” including observation by Google¹¹⁸ (Schneier Opinion 13).

Technologists do not have (and should not apply) a special understanding of such terms that is different from or narrower than their ordinary sense. When attaching labels like “private” or “incognito” to products, software developers must assume that user expectations will include the broadest scope of such words¹¹⁹ (Schneier Opinion 1).

61. In these claims, which are not based on empirical evidence and are unsupported, Mr. Schneier assumes that “private” means from everyone, including from Google. However, privacy is not an all or nothing proposition, and the meaning of privacy is context specific. For example, one can have privacy from other people who use the same internet-connected device within a household, but not from internet tracking generally. Indeed, as Plaintiffs acknowledge, that is precisely the type of privacy that Incognito (and other private browsing modes) provide. Mr. Castillo noted that “logically, [the Incognito Splash

¹¹⁶ Schneier Report, ¶ 24. *See also*, Schneier Report, Sections 1.2-1.5.

¹¹⁷ Schneier Report, ¶ 297.

¹¹⁸ Schneier Report, ¶ 301.

¹¹⁹ Schneier Report, ¶ 26.

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Screen] says activity might be visible to the websites you visit. Of course, if you go to Lowe's and you want to buy a shovel, they're going to see you went to Lowe's and wanted to buy a shovel."¹²⁰

62. In fact, Mr. Schneier himself implies that privacy is context specific in his book *Data and Goliath* where he says, "Our personal definitions of privacy are both cultural and situational. They were different 100 years ago than they are today, and they'll be different 100 years from now. They're different in the US than they are in Europe, Japan, and elsewhere. They're different across generations."¹²¹ As shown by my empirical studies, many people indeed expect that companies that provide analytics and advertising services to websites visited *do* receive their data even in private browsing sessions.
63. Not only is the meaning of "privacy" and "private" context-specific, but also, as discussed in my Affirmative Report, *which* people or entities have access to consumer information, *what* types of consumer information people or entities have access to, and *how* people or entities use this consumer information affect consumers' concerns about privacy.¹²²

64. **ATTORNEYS' EYES ONLY** [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED].^{123]}

¹²⁰ Videotaped Deposition of Christopher Castillo, February 8, 2022 (Castillo Dep.) at 154:8-11.

¹²¹ Schneier, Bruce, *Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World*, First Edition, 2015, W. W. Norton & Company, Inc, p. 164.

¹²² Amir Affirmative Report, ¶ 45.

¹²³ Amir Affirmative Report, ¶ 45. **ATTORNEYS' EYES ONLY** [GOOG-CABR-05156497-6555, at 6508-6510].

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65. As another example, in one study, a majority of respondents agreed that it was acceptable for employers to install monitoring cameras after multiple workplace thefts, while a majority of respondents also said they would not want a “smart thermostat” that tracked their movements inside their house installed in exchange for energy bill savings.¹²⁴
66. Other literature further shows that context matters when assessing privacy concerns. Morando et al. (2014)’s review of studies on privacy concluded that “the extreme context-dependency of the evaluation of personal data suggests that general rules are important, but also case-by-case arrangements are needed.”¹²⁵ Context that can affect consumers’ evaluation of privacy include timing of a privacy indicator, as well as the sensitivity of the information.¹²⁶ For example, Mr. Byatt testified that information he does not want Google to have “could be pretty context-dependent.”¹²⁷ Moreover, some individuals are more concerned about privacy than others, so context and the response to a particular context also depends on the individual consumer. For example, Westin categorized consumers by varying degrees of privacy concern in a series of surveys.¹²⁸ Mr. Byatt similarly acknowledged in his deposition that he does not “feel like I’m a particularly privacy conscious person” and is “certainly not a particularly private person.”¹²⁹

¹²⁴ Amir Affirmative Report, ¶ 45. Raine, Lee and Maeve Duggan, “Privacy and Information Sharing,” January 14, 2016, *Pew Research Center*, available at <<https://perma.cc/MEG2-UVUY>>, accessed on May 12, 2022.

¹²⁵ Morando, Federico, et al., “Privacy Evaluation: What Empirical Research on Users’ Valuation of Personal Data Tells Us,” *Internet Policy Review*, Vol. 3, No. 2, 2014, pp. 1-11, p. 8.

¹²⁶ Egelman, Serge, et al., “Timing is Everything? The Effects of Timing and Placement of Online Privacy Indicators,” *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 2009, pp. 319-328, pp. 319 and 327.

¹²⁷ Byatt Deposition, at 43:3-8.

¹²⁸ Kumaraguru, Ponnuram and Lorrie. F. Cranor, “Privacy Indexes: A Survey of Westin’s Studies,” *Carnegie Mellon University, School of Computer Science, Institute for Software Research International*, 2005, pp. 1-22, pp. 4-5.

¹²⁹ Byatt Deposition, at 64:10-25.

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67. Mr. Schneier also cites to studies that are not relevant to the specific facts of this case. For example, he states:

One 2013 study found that an increase in users’ perceived control over the privacy of their personal information—defined as “40 questions, which varied in intrusiveness about the respondent’s life”—is associated with an increased willingness to disclose such information.¹³⁰

68. The research cited in Mr. Schneier’s statement relates to the impact of perceived control on people’s willingness to actively reveal their personal information to be shared with their community or published publicly.¹³¹ It does not study people’s willingness or expectation of passively allowing a company such as Google to receive certain types of browsing data such as URLs of the sites visited, IP address and cookies placed on the browser, which is at issue in this matter.
69. Without recognizing the variation and the context-specific nature of “privacy” and “private,” Mr. Schneier’s opinions and claims are vague and uninformative for the purposes at issue in this case.

B. Mr. Schneier’s Opinions Regarding Privacy Fails to Acknowledge That Consumers May Knowingly Prefer Convenience and Free Services

70. Mr. Schneier’s opinions regarding privacy also fail to acknowledge that many consumers are willing to balance privacy concerns with other priorities, such as their desire for

¹³⁰ Schneier Report, ¶ 32.

¹³¹ Brandimarte, Laura, et al., “Misplaced Confidences: Privacy and the Control Paradox,” *Social Psychological and Personality Science*, Vol. 4, No. 3, 2012, pp. 340-347, pp. 340 and 345.

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convenience and free services, or security.¹³² For example, he makes the following unsupported claims:

[P]rivacy is a value to be preserved at all times¹³³ (Schneier Opinion 1).

Public concern about privacy has also escalated during the rise of online tracking for purposes of advertising and “website analytics”—that is, the systematic collection, reporting and analysis of website data for the purpose of understanding site usage and maximizing site effectiveness¹³⁴ (Schneier Opinion 2).

[P]eople aren’t given a choice between free/convenient products and services that come with surveillance or expensive and/or inconvenient products and services that do not¹³⁵ (Schneier Opinion 2).

Targeted Advertisement Has Risks for Users¹³⁶ (Schneier Opinion 3).

[T]rading privacy for services isn’t necessarily a good or fair bargain¹³⁷ (Schneier Opinion 6).

Users’ continual exposure of their private data online cannot serve as evidence of their consent to be monitored, especially when they seek to affirmatively protect their privacy using a private browsing mode¹³⁸ (Schneier Opinion 6).

71. As with his other opinions and claims, Mr. Schneier conducted no empirical studies to support these claims. By making these claims, Mr. Schneier fails to acknowledge

¹³² Indeed, internal Google survey data produced in this case [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] Videotaped Zoom Deposition of Lorriane Twohill, May 6, 2022, at 53:14-16, 92:8-10, and 145:5-8.

¹³³ Schneier Report, ¶ 33; As an example of variance in consumer opinion, this statement conflicts with the opinion of Mr. Byatt: “I’m not particularly concerned about protecting privacy [...] for the sake of my privacy.” Byatt Deposition, at 65:8-10.

¹³⁴ Schneier Report, ¶ 64.

¹³⁵ Schneier Report, ¶ 51.

¹³⁶ Schneier Report, Section 3.5.

¹³⁷ Schneier Report, ¶ 133.

¹³⁸ Schneier Report, ¶ 136.

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consumers' preference of convenience and services, and such preference differs across individuals and depends on the context. As discussed in my Affirmative Report, by giving up some level of privacy, consumers may receive benefits such as convenience and better access to services offered by websites.¹³⁹ I also discussed in my Affirmative Report, as a result of context-specific privacy concerns and varying preferences, consumers' stated preferences do not always line up with their revealed preferences regarding privacy.¹⁴⁰ Moreover, in his book *Data and Goliath*, Mr. Schneier also suggests that consumers are willing to trade some measure of privacy in exchange for benefits.¹⁴¹ This inconsistency, commonly referred to in the literature as the "privacy paradox," has been widely studied.¹⁴² An example from one of the studies I cited demonstrates a tradeoff where survey respondents self-reported themselves as either moderately or very concerned about privacy, but nevertheless admitted to providing their phone numbers or even social security numbers for discounts or better services.¹⁴³ In fact, Google's internal documents

██

██

██

¹³⁹ Amir Affirmative Report, ¶ 45. See Oppmann, Patrick, "In Digital World, We Trade Privacy for Convenience," April 14, 2010, *CNN*, available at <<https://perma.cc/37D2-A7SU>>, accessed on May 13, 2022; Raine, Lee and Maeve Duggan, "Privacy and Information Sharing," January 14, 2016, *Pew Research Center*, available <<https://perma.cc/MEG2-UVUY>>, accessed on May 12, 2022.

¹⁴⁰ Amir Affirmative Report, ¶ 45.

¹⁴¹ "Most people don't seem to care whether their intimate details are collected and used by corporations...Most people are happy to exchange sensitive personal information for free e-mail, web search, or a platform on which to chat with their friends." Schneier, Bruce, *Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World*, First Edition, 2015, W. W. Norton & Company, Inc.

¹⁴² Amir Affirmative Report, ¶ 45. See for example, Acquisti, Alessandro and Jens Grossklags, "Privacy and Rationality in Individual Decision Making," *IEEE Security & Privacy*, Vol. 3, No. 1, 2005, pp. 26-33 ("Acquisti and Grossklags (2005)"), pp. 27-29; See also, Athey, Susan, et al., "The Digital Privacy Paradox: Small Money, Small Costs, Small Talk," *NBER Working Paper Series*, 2017, pp. 1-26, pp. 2, 11-12

¹⁴³ Acquisti and Grossklags (2005), pp. 27-29.

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]”¹⁴⁴

72. A Consumer Experience Sentiment Report found that although around half of respondents think that brands using their data in marketing and advertising is “invasive,” around half of respondents also find it beneficial in helping them discover things that interest them and making it easier for them to find products and services that interest them most.¹⁴⁵ The same study also found that consumers are becoming more willing to provide their data (*e.g.*, browsing history, purchase history, location) in order to receive more personalized experiences, and that many surveyed consumers consider brands using their data in marketing and advertising helps them discover more things that interest them, makes it easier to find the products/services that interest them most, or makes navigating the internet easier.¹⁴⁶ Furthermore, a study conducted by McKinsey found that while consumers are concerned about privacy issues, they value the benefits of web services more. In fact, the value consumers get from using web services is six times more than they are willing to pay to avoid privacy risk.¹⁴⁷

¹⁴⁴ GOOG-BRWN-00156752-6824, at 6772. *See also*, **Sections IV.E and V.A**, in which I further discuss the context-specific nature of consumer awareness of data collection, concern for privacy, and perception of the cost and benefit of information tracking.

¹⁴⁵ “2021 Consumer Experience Sentiment Report,” 2021, *Merkle*, available at < <https://perma.cc/3CN5-XQ8G> >, accessed on May 17, 2022 (“Merkle (2021)”), p. 6.

¹⁴⁶ Merkle (2021), p. 6.

¹⁴⁷ “Consumers Driving the Digital Uptake - The Economic Value of Online Advertising-based Services for Consumers,” *IAB Europe*, September 2010, available at <<https://perma.cc/49BE-CT4P>>, accessed on May 17, 2022, pp. 5 and 22.

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73. Many consumers, including Plaintiffs, prefer more relevant personalized ads over non-personalized ads.¹⁴⁸ (“[I]n general, I think targeted advertising is a good thing.”¹⁴⁹ “I would say there’s probably utility in those ads.”¹⁵⁰ “[S]ome are helpful and useful... If it’s a store I like, then it is helpful and useful.”¹⁵¹ “I enjoy getting new products and services that I maybe hadn’t been aware of. I think finding, you know, new brands or new information or new content that appeals to me is nice.”¹⁵²) “One study finds that the majority of consumers prefer personalized ads over non-personalized ads due to the reduction of irrelevant ads, discovery of new products, and improved efficiency of searching and shopping.”¹⁵³ “Another study on consumer interactions with Facebook’s personalized ads and privacy controls found that enhanced privacy controls increased consumer engagement with personalized ads, specifically for ads that used more unique information and for groups that were more likely to use opt-out privacy settings.”¹⁵⁴
74. The inconsistency between consumers’ stated preferences and the revealed preferences regarding privacy, or the so-called “privacy paradox,” can also be inferred from users’ browser choices. For example, browsers such as the Brave browser and the Tor Browser attempt to distinguish themselves from other browsers as providing additional privacy

¹⁴⁸ Amir Affirmative Report, ¶ 47

¹⁴⁹ See Brown Deposition, at 158:8-9.

¹⁵⁰ See Video-Recorded Deposition of Jeremy Davis, January 7, 2022, at 72:15-16.

¹⁵¹ See Virtual Videoconference Video-Recorded Deposition of Monique Trujillo, Friday, February 11, 2022, at 112:14, 113:4-5.

¹⁵² See Byatt Deposition, at 24:16-21.

¹⁵³ Amir Affirmative Report, ¶ 47. Pauzer, Holly, “71% of Consumers Prefer Personalized Ads,” *Adlucent*, available at <<https://perma.cc/A2TA-B4KF>>, accessed on May 16, 2022.

¹⁵⁴ Amir Affirmative Report, ¶ 47. Tucker, Catherine E., “Social Networks, Personalized Advertising, and Privacy Controls,” *Journal of Marketing Research*, Vol. LI, 2014, pp. 546-562.

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protections.¹⁵⁵ However, the market shares of these browsers are small. Between 2016 and 2022, the market share of Brave browser or Tor Browser were not separately listed by StatCounter and are likely being included in the “Other” browser category, which constitutes between 0.05% and 0.13% of browser usage.¹⁵⁶ The low adoption of privacy-oriented web browsers suggests that, if Mr. Schneier’s unfounded claim that “[p]ublic concern about privacy has also escalated” were true, most consumers chose to not use privacy-oriented web browsers such as a Brave browser or a Tor browser. Additionally, using these alternative, privacy-oriented browsers entails drawbacks such as limited anonymity protection, encryption methods that are not robust, and sluggish performance.¹⁵⁷

75. **ATTORNEYS’ EYES ONLY** [REDACTED]

¹⁵⁵ “Brave is one of the safest browsers on the market today. It blocks privacy-invasive ads & trackers. It blocks third-party data storage and IP address collection. It protects from browser fingerprinting. It upgrades every webpage possible to secure https connections. And it does all this by default.” “The Best Privacy Online,” *Brave*, available at <<https://perma.cc/TC6U-EHCJ>>, accessed on May 16, 2022; “Protect Yourself Against Tracking, Surveillance, and Censorship,” *Tor Browser*, available at <<https://perma.cc/9ZM2-NHFU>>, accessed on May 17, 2022.

¹⁵⁶ Data downloaded from the following source: “Browser Market Share United States of America, 2016-2022,” *StatCounter*, available at <<https://perma.cc/K3WT-VFQM>>, accessed on May 20, 2022.

¹⁵⁷ Further, “Tor has been used by organized crime leaders and shady characters who are specifically hiding their illegal activity from the authorities. You may also run into the people who want to steal personal information, so be aware of the type of characters you will be connected to on the servers.” “Is Tor Browser Safe?” *Secure Thoughts*, available at <<https://perma.cc/44T7-SU2Y>>, accessed on May 17, 2022.

¹⁵⁸ **ATTORNEYS’ EYES ONLY** [Defendant’s Amended Objections and Responses to Plaintiffs’ Interrogatories Set 9 (No. 36), *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, April 15, 2022 (“Amended Response to Interrogatory 36”), pp. 7-11 [REDACTED]

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C. Mr. Schneier’s Opinion Regarding Google’s Incentive of Promoting Itself as a “Trustworthy Guardian of Privacy in Order to Sustain the User Base That Attracts Advertisers to Its Platforms” Is Speculative and Is Inconsistent with the Fundamental Marketing Strategy of “Doing Well by Doing Good” (Schneier Opinions 1, 7, 8, 10, and 14)

76. Mr. Schneier makes various unsupported claims that Google has incentives to oversell its promises of privacy in order to make a profit. These claims are speculative, ignore Google documents with contradicting information, and are inconsistent with fundamental marketing strategy. Mr. Schneier fails to recognize that the long-term path to profitability for Google is to “do well by doing good” rather than mislead consumers. For example, Mr. Schneier made the following claims:

Google has strong business incentives to promote itself as a trustworthy guardian of privacy in order to sustain the user base that attracts advertisers to its platforms. Specifically, Google has incentives to continue offering and marketing its Incognito mode, notwithstanding Google’s knowledge that users misunderstand Incognito mode¹⁵⁹ (Schneier Opinion 1).

While the promise of privacy control is important in allowing Google to attract and retain users, the company has strong incentives to overstate the effectiveness of Chrome’s privacy control mechanisms. Google is able to increase its profits from its actual customers—that is, advertisers—by reducing the privacy of its intended audience—that is, users¹⁶⁰ (Schneier Opinion 2).

Although Google’s data collection was here framed as an effort “to help users,” it has also become increasingly central to the company’s operations. Google’s business model demands the maximization of data collection, and creates a strong motivation to overpromise and underdeliver on privacy¹⁶¹ (Schneier Opinion 7).

In January 2012, Google announced its intent to combine information collected from all Google services, couching the plan as a way to do “cool things” that benefit users. Although users were assured that the move would result in “sharing more of your information with...well, you,” the years that followed saw an unprecedented rise in the extent to which Google collected, retained,

¹⁵⁹ Schneier Report, ¶ 43.

¹⁶⁰ Schneier Report, ¶ 57.

¹⁶¹ Schneier Report, ¶ 156.

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and exploited that user information to create astonishingly intimate profiles of its users' demographics, financial status, interests, and habits¹⁶² (Schneier Opinion 8).

Privacy controls may result in Google receiving less data, and therefore making less money, so Google is motivated to ensure that any privacy controls are difficult to navigate and understand. At the same time, Google's brand depends in part on Google being perceived as a company that provides control—as promised and defined by Google¹⁶³ (Schneier Opinion 10).

My extensive experience in the field of computer security and privacy, and the evidence presented in this case, leads me to concur that Google's effort to position the company as a champion of user privacy at the same time that it assiduously accumulates data about users' that online activity—even when they take up the company's offer to browse in a manner promised to shield them from unwanted scrutiny—is a form of “privacy theater,” one that is more concerned with managing users' impressions than with respecting their privacy intentions. After all, increasing user privacy would negatively affect Google's income stream¹⁶⁴ (Schneier Opinion 14).

77. Mr. Schneier also claims that Google uses “dark patterns,” which he describes “is a term given to subversive user-design tricks intended to manipulate users into doing things they would not normally want to do.”¹⁶⁵ While Mr. Schneier claims that the industry uses dark patterns, he fails to identify any specific dark patterns as they pertain to either Google or private browsing modes at issue and prospective Class Members' use of internet browsers. To support his claim, Mr. Schneier cites to three fines levied by the Commission Nationale de l'Informatique et des Libertés (“CNIL”).¹⁶⁶ Not only are those fines based on French

¹⁶² Schneier Report, ¶ 175.

¹⁶³ Schneier Report, ¶ 255.

¹⁶⁴ Schneier Report, ¶ 368.

¹⁶⁵ Schneier Report, ¶¶ 138 and 140. Classifying a design element as a “dark pattern” is uninformative as the classification is done after the fact. *See* Ravenscraft, Eric, “How to Spot—and Avoid—Dark Patterns on the Web,” July 29, 2020, *Wired*, available at <<https://perma.cc/74PB-5E5L>>, accessed on May 17, 2022. “Not all dark patterns are designed maliciously, and some UX designers might not even be aware that they’ve built a system that’s tricking users. In many cases, designers might just be doing what works.”

¹⁶⁶ Schneier Report, ¶¶ 140-142.

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standards that do not apply in the United States, but more importantly they do not relate to private browsing or data flow from visits to non-Google websites, the only conduct at issue here.¹⁶⁷ Therefore, the CNIL’s fines cannot be extrapolated to make conclusions about data collection in the private browsing modes at issue.

78. The intentional use of “dark patterns” is also not consistent with the strategy of “doing well by doing good,” which is well-known and fundamental to marketing. The first chapter of an introductory textbook describes that “[t]he aim of marketing is to create value for customers in order to capture value from customers in return” and is based on satisfying customer needs.¹⁶⁸ The first chapter of another introductory textbook defines marketing as “meeting needs profitably.”¹⁶⁹ Literature supports that providing quality products and services leads to profitability.¹⁷⁰
79. Mr. Schneier fails to recognize that Google, like other companies, has an incentive to create products that consumers find useful and beneficial, which in turn rewards Google through an increased user base and user engagement. As an example of “meeting needs profitably” in their noted marketing textbook, Kotler and Keller specifically discussed Google’s strategy: “[w]hen Google recognized that people needed to more effectively and efficiently access information on the Internet, it created a powerful search engine that organized and

¹⁶⁷ One addresses creating a Google Account when setting up an Android mobile device (Schneier Report ¶ 140), and the other two relate to cookies placed while visiting Google websites, such as google.fr (Schneier Report ¶¶ 141-142).

¹⁶⁸ “If the marketer engages consumers effectively, understands their needs, develops products that provide superior customer value, and prices, distributes, and promotes them well, these products will sell easily.” Kotler, Philip and Gary Armstrong, *Principles of Marketing*, Seventeenth Edition, Pearson, 2018, pp. 26 and 29.

¹⁶⁹ Kotler, Philip and Kevin L. Keller, *Marketing Management*, Fifteenth Edition, Pearson, 2016 (“Kotler and Keller (2016)”), p. 5.

¹⁷⁰ See Kimes, Sheyrl E., “How Product Quality Drives Profitability: The Experience at Holiday Inn,” *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 42, No. 3, 2001, pp. 25-28.

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prioritized queries. [...] [Google] turned a private or social need into a profitable business opportunity.”¹⁷¹ This is encapsulated by Google’s philosophy, which includes principles such as “Focus on the user and all else will follow.”¹⁷² Google’s philosophy further states that “[s]ince the beginning, [it has] focused on providing the best user experience possible. [...] [It] take[s] great care to ensure that [its products] will ultimately serve [users], rather than [its] own internal goal or bottom line.”¹⁷³ While Google recognizes that it is a business that generates revenue from advertising, it has a set of guiding principles for advertising “[t]o ensure that [it is] ultimately serving all [its] users.”¹⁷⁴ These principles include: ensuring that ads are relevant to users and do not interfere with user experience, and clearly indicating “Sponsored Links” among search results.¹⁷⁵ The commitment to these principles remains clear through specific design choices, such as Google’s decision to keep its main search page free of advertisements since 1998.¹⁷⁶

80. Further, Google’s internal documents reflect the same “doing well by going good” philosophy by building consumer trust. One document explains that “[user] trust is essential to any successful brand, and must be at the core of a successful privacy and data strategy.”¹⁷⁷ This is an essential part of Google’s business model because “[when] users feel safe on the web, that allows them to get more done without worrying about being

¹⁷¹ Kotler and Keller (2016), p. 5.

¹⁷² “10 Things We Know to Be True,” *Google*, available at <<https://perma.cc/2ATA-372V>>, accessed on May 16, 2022 (“Google Philosophy”).

¹⁷³ Google Philosophy.

¹⁷⁴ Google Philosophy.

¹⁷⁵ Google Philosophy.

¹⁷⁶ See Godden-Payne, Craig, “How Google’s Homepage Has Changed Over the Last 20 Years,” March 14, 2020, *UX Collective*, available at <<https://perma.cc/7RFV-BEPK>>, accessed on May 16, 2022.

¹⁷⁷ GOOG-BRWN-00026989, at 6993.

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compromised. Trust is important to Chrome because it enables us to ship differentiated features leveraging Google services.”¹⁷⁸ Google documents also show the effort that Google puts into analyzing and improving user trust.¹⁷⁹ Other Google documents show high levels of existing user trust.¹⁸⁰

81. While Mr. Schneier claims that Google benefits from deceit, this opinion is at odds with the philosophy of establishing a trustful and mutually beneficial long-term relationship with consumers. As a result, Mr. Schneier’s claims amount to speculation and offers no analysis to support this point.

VI. MR. KEEGAN’S SURVEY IS METHODOLOGICALLY FLAWED AND IS NOT AN APPROPRIATE METHOD TO ASSESS THE USAGE OF INTERNET BROWSERS AND PRIVATE BROWSING MODE, OR THE PREVALENCE OF GOOGLE ACCOUNTS

82. Mr. Keegan conducted a survey to “obtain information regarding Internet browser use, private browsing mode use, and the prevalence of Google account holding among potential members of each of the proposed Classes [] during the relevant time period.”¹⁸¹ However, Mr. Keegan’s survey is methodologically flawed and is not an appropriate method to assess the usage of internet browsers, private browsing mode, or the prevalence of Google Account holders.

¹⁷⁸ GOOG-BRWN-00147709, at 7711.

¹⁷⁹ For example, Google surveyed 12,000 users in eight countries about their trust in Google. GOOG-BRWN-00067136, at 7141.

¹⁸⁰ Google documents demonstrate [REDACTED] GOOG-BRWN-00683201, at 3211.

¹⁸¹ Keegan Report, ¶ 2.

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83. As a first matter, Mr. Keegan’s survey questions are phrased in a way that makes them susceptible to recall bias. Recall bias is a “[s]ystematic error due to differences in accuracy or completeness of recall to memory of past events or experiences.”¹⁸² Specifically, the key questions of Mr. Keegan’s survey are the following:

Which of the following Internet web browsers, if any, have you used in the last five years?¹⁸³

Some Internet web browsers offer a **private browsing mode**. Which of the following types of private browsing, if any, have you used in the last five years?¹⁸⁴

If you know, which of the following types of accounts have you had at any time during the last five years?¹⁸⁵

84. All three key questions ask respondents to recall events happening over the last five years. In other words, all three key questions are based on respondents’ recall. For a recall measure to be effective, the information must be first encoded in respondents’ memories.¹⁸⁶ Even for important events in the past (commonly referred to as highly “salient” events in psychology), studies have found that memory is unreliable, and reliability decreases over time.¹⁸⁷ Browsing the internet is not a highly salient event, and five years is too broad of a

¹⁸² Last, John M., *A Dictionary of Epidemiology*, Fourth Edition, 2001, *Oxford University Press*, p. 153.

¹⁸³ Keegan Report, Keegan_Exhibits_20. Emphasis in original.

¹⁸⁴ Keegan Report, Keegan_Exhibits_21. Emphasis in original.

¹⁸⁵ Keegan Report, Keegan_Exhibits_22. Emphasis in original.

¹⁸⁶ “[I]t is important to note that recall aids can only be effective for material that was encoded in memory.” Krosnick, J.A. and Stanley Presser. “Question and Questionnaire Design,” in *Handbook of Survey Research*, J.D. Wright and P.V. Marsden, Second Edition, 2010, Elsevier (“Krosnick and Presser (2010)”), at p. 288.

¹⁸⁷ “When information is encoded in memory, its retrieval is strongly affected by both the information’s salience and the elapsed time since the information was encoded.” Krosnick and Presser (2010), at p. 288. “Perhaps chief among the circumstances that should decrease accuracy in self-report is a separation in time between the report and the actual occurrence of the process [...] the vagaries of memory may allow the invention of factors presumed to be present at the time the process occurred.” Nisbett, Richard E. and Timothy Wilson, “Telling More than We Can Know: Verbal Reports on Mental Processes,” *Psychological Review*, Vo. 84, No. 3, 1977, pp. 231-259

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time horizon to remember events that are not very important. Respondents may not accurately recall which browsers they used and they may guess from the list of choices available. Respondents may also have had false memories that they used a certain browser or private browsing mode in the past after being cued on browsers and private browsing modes in the survey questions.¹⁸⁸

85. Contrary to Mr. Keegan, to mitigate recall bias, my studies asked respondents questions based on their recent activities. For example, I asked the following questions:

Thinking about the device(s) you use to browse the internet (such as your phone, your personal laptop, or your office computer), which internet browser(s) do you currently use?¹⁸⁹

In the past six months, which of the following features, if any, have you used on your internet browser(s)?¹⁹⁰

86. By asking respondents “Which of the following types of private browsing, if any, have you used in the last five years?”, Mr. Keegan’s survey directly suggests to respondents that they should focus on private browsing mode and may lead them to answer that they have used private mode even if they have not. My survey instead asked respondents “which of the following features, if any, have you used on your internet browser(s)?” and presented a list of options that includes both private browsing mode and several “distractor” features. By

(“Nisbett and Wilson (1977)”), at pp. 251-252. “[E]vents that are more salient call for a longer recall period, while events that are more frequent call for a shorter period; the probability of remembering spending a night at the hospital is likely to be higher than the probability of remembering a visit to a GP.” See Kjellson, Gustav, et al., “Forgetting to Remember or Remembering to Forget: A Study of the Recall Period Length in Health Care Survey Questions,” *Journal of Health Economics*, Vol. 35, 2014, pp. 34-46, p. 35.

¹⁸⁸ For example, one study found that after participants saw a Disney ad suggesting that they had shaken hands with Bugs Bunny (a character that would never appear at a Disney resort), they were more likely to have false memories that they had actually shaken hands with Bugs Bunny at a Disney resort as a child. See Braun, Kathryn A., et al., “Make My Memory: How Advertising Can Change Our Memories of the Past,” *Psychology & Marketing*, Vol. 19, No. 1, 2002, pp. 1-23, p. 1, 13, 14, and 17.

¹⁸⁹ Amir Affirmative Report, Appendices F.1, F.2, and F.3.

¹⁹⁰ Amir Affirmative Report, Appendices F.1, F.2, and F.3.

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presenting these distractor features and asking the question in a less suggestive way, my survey avoided leading respondents in the manner that Mr. Keegan's is vulnerable to and my results are more likely to reflect actual use of private browsing mode.

87. **Tables 4 and 5** compare the metrics obtained from Mr. Keegan's flawed methodology and from the three studies in the Amir Affirmative Report. Mr. Keegan reports a larger share of respondents for 5 of the 6 usage statistics (Keegan Opinion 3). For example, while my studies report that no more than [REDACTED] of Chrome users have used Incognito mode in the past six months, his study reports an estimate of 64%.¹⁹¹

Table 4. Comparison of Browser Usage between Keegan Report and Amir Affirmative Report

	Keegan Report During <u>last five</u> <u>years</u>	Amir Affirmative Report In the <u>past six</u> <u>months</u>
% of respondents who used Chrome	77.5%	[REDACTED]
% of Chrome users who used Incognito mode	64.1%	[REDACTED]
% of respondents who used Safari	46.2%	[REDACTED]
% of Safari users who used private browsing mode	59.2%	[REDACTED]
% of respondents who Used Edge / Internet Explorer	40.8%	[REDACTED]
% of Edge / Internet Explorer users who used InPrivate mode	40.3%	[REDACTED]

¹⁹¹ To calculate the percentage of each browser's users who used that browser's private browsing mode from my survey data, the number of respondents who used that browser and indicated in QS8 that they used a private browsing mode is divided by the number of respondents who used that browser (based on QS7) and answered QS8. Therefore, these measures could be overstated due to respondents who used multiple browsers and only used one browser's private browsing mode. For example, a respondent would be included in "% of Chrome users who used Incognito mode" if they indicated in QS7 that they used *both* Chrome and Safari and, having used private browsing mode *only* on Safari, indicated in QS8 that they used private browsing mode.

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Table 5. Comparison of Other Browser Usage Among Users of Each Key Browser between Keegan Report and Amir Affirmative Report

<i>(% of respondents for each browser)</i>	Keegan Report During <u>last five years</u>	Amir Affirmative Report In the <u>past six months</u>
Chrome users who also use Safari and/or Edge / Internet Explorer	60.7%	██████
Safari users who also use Chrome and/or Edge / Internet Explorer	74.2%	██████
Edge / Internet Explorer users who also use Chrome and/or Safari	90.4%	██████

88. Even if Mr. Keegan’s survey were designed to account for recall bias, his survey is not an appropriate method to assess actual usage of internet browsers, private browsing mode, or the prevalence of Google Account holders. This is because Mr. Keegan’s survey does not capture the heterogeneity of the frequency of Incognito use. Chrome users may use Incognito for specific, irregular tasks (such as buying a gift or booking a trip). A 2017 study conducted by DuckDuckGo found that, of the 46% of Americans who have used private browsing on a desktop, only about 58% use it at least once a week and more than 30% use it only on rare occasions.¹⁹²

89. **ATTORNEYS' EYES ONLY** [REDACTED]

[REDACTED]

90. Relatedly, Mr. Keegan's survey does not address whether respondents had Google Accounts before, during, or after they used the various private browsing modes, and does

¹⁹² “A Study on Private Browsing: Consumer Usage, Knowledge, and Thoughts,” January, 2017, *DuckDuckGo*, available at <<https://perma.cc/7UNX-Q8SQ>>, accessed on May 17, 2022.

¹⁹³ **ATTORNEYS' EYES ONLY** [Amended Response to Interrogatory 36, pp. 7-11.]

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not collect information on whether the respondents were logged into their Google accounts while using a private browsing mode.

A handwritten signature in blue ink, consisting of a stylized 'A' followed by a diagonal stroke.

On Amir

APPENDIX A

CURRICULUM VITAE

On Amir

Rady School of Management
University of California, San Diego
Wells Fargo Hall
9500 Gilman Drive, MC 0553
La Jolla, CA 92093-0553
(858) 534-2023
oamir@ucsd.edu

Education

Ph.D., Management Science, Marketing, Massachusetts Institute of Technology
B.S., Computer Science, Israeli Open University, Tel Aviv

Academic Employment

2020 – present	Wolfe Family Presidential Endowed Chair in Life Sciences, Innovation, and Entrepreneurship, Professor of Marketing Rady School of Management, University of California, San Diego,
2018 - 2021	Associate Dean of Programs Rady School of Management, University of California, San Diego
2018 – 2020	Professor of Marketing Rady School of Management, University of California, San Diego
2010 – 2017	Associate Professor of Marketing Rady School of Management, University of California, San Diego
2012 – 2013	Visiting Associate Professor of Marketing Kellogg School of Management, Northwestern University
2011 – 2012	Visiting Professor of Marketing Arison School of Management, IDC
2005 – 2010	Assistant Professor of Marketing Rady School of Management, University of California, San Diego
2003 – 2005	Assistant Professor of Marketing School of Management, Yale University

Other Employment

2018 - present	Chief Behavioral Science Officer, Fiverr, Inc.
1991 – 1999	Israeli Air Force

Publications

- Kristen Duke & On Amir (forthcoming). The Importance of Selling Formats: When Integrating Purchase and Quantity Decisions Increases Sales, *Marketing Science*.
- Evan Weingarten, Kristen Duke, Wendy liu, Rebecca Hamilton, On Amir, Gil Apple, Moran Cerf, Joe Goodman, Andrea Morales, Ed O'Brian, Jordi Quidbach, & Monic Sun (forthcoming). What Makes People Happy? Decoupling the Experiential-Material Continuum, *Journal of Consumer Psychology*.
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- Goal Proximity, Social Information, and Giving: When Norms Backfire (with Coby Morvinski and Matt Lupoli) – revision invited Journal of Marketing
- The Entrenchment Effect (with Allie Lieberman and Ziv Carmon) – Under review at Journal of Marketing Research
- How Different Encoding Processes Influence Confidence (with Giulia Maimone and Uma Karmarkar) – Under review at Journal of Experimental Psychology: Learning, Memory, and Cognition
- The most Influential Age Hypothesis: Does the Self Cause Predictable Preferences (with Nina Mazar) – revision invited Management Science.
- Reference Escalation in Sequential Choice (with Coby Morvinski) – under review Marketing Science
- My Experience or My Expectations: The Effect of Expectations as Reference Points on Evaluations of Experiential Purchases (with Amar Cheema, Davide Proserpio, and Stephanie Tully) – under review Journal of Consumer Research.

Risk Aversion as Self Control (with Orly Lobel and Kelly Goldsmith)

Driving Pro-Environmental Choice (with Elizabeth A. Keenan and Ayelet Gneezy)

Risk Management for the Future: Age, Risk, and Choice Architecture (with Orly Lobel)

Honors and Awards

MSI Research Award: “Do Experts Outperform Artificial Intelligence? The Case of Logo Design,” # 4000657, 2019

MSI Research Award: “Quantity Integration,” #4000477, 2018

MSI Research Award: “New Product Adoption,” #4-1842, 2014

Robert Wood Johnson Foundation research grant for Healthy Choices.

MSI Junior Scholars 2009

“Most Valuable Professor Award,” voted by the Flex MBA class of 2007

“Most Valuable Professor Award,” voted by the Fulltime MBA class of 2007

MSI Research Award: “Motivating Discounts: Price Motivated Consumer Reasoning”, #4-1273, 2004

AMA - Sheth Doctoral Consortium Fellow, 2002

MSI Research Award: “Information Aversion: Indecision, Procrastination, and Consumer Choice Online”, #4-1141, 2001

CS Holding Fellowship, 2001

Walter A Rosenblith Fellowship, 2000

Conference presentations and Invited Talks

University of California, Berkeley, Haas (2015)

University of Toronto, Rotman (2015)

University of Southern California, Marshal (2014)

University of Southern California, Psychology (2013)

University of Pennsylvania, Wharton (2007, 2013)

University of Chicago, Booth (2013)

Northwestern University, Kellogg (2012)

Interdisciplinary Center, Arison (2011)

Tel Aviv University, Recanati, Coller (2008, 2009, 2018)

Stanford University, GSB (2009)

Columbia University, GSB (2009)

University of California, San Diego, Psychology (2005, 2006, 2007, 2008)

University of California, San Diego, Economics (2008)

Erasmus University (2008)

University of Melbourne (2007)

Hebrew University (2007)

Washington University, St. Louis (2007)

University of San Diego, School of Law (2006)

University of California, Los Angeles, Anderson (2004)
Yale University, Psychology (2004)
INSEAD (2004, 2015)
Johns Hopkins University (2017)
NUS (2018)
Ben Gurion University (2018)
HKU (2019)
CUHK (2019)

Association for Consumer Research, 2001, 2003, 2004, 2006, 2007, 2013, 2015, 2016
Society of Consumer Psychology, 2004, 2005, 2008, 2012, 2014, 2015, 2016, 2017
Society for Judgement and Decision Making, 2003, 2005, 2006, 2011, 2015, 2016
Behavioral Decision Making Research in Management, 2002, 2006, 2008, 2014, 2016, 2018
FUR, IESE, 2008
Marketing in Israel, 2002, 2003, 2005
Northeastern Marketing Consortium 2003
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DMEP 2019

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Decision Making Traps and Tips for Negotiators, CIIAN, December, 2021
2021's Best Things to Buy on Black Friday, WalletHub, November 19, 2021
'That's not true.' San Diego doctors tackle COVID misinformation sown during county meeting.
San Diego Union Tribune, October 6, 2021
You could be one of three San Diegans who just won \$50,000 in the state's vaccine lottery. San
Diego Union Tribune, June 4, 2021.
California's vaccine incentives program – KPBS, May 2021.
San Diego health systems ask for fewer vaccine doses, turn down extra amid supply glut. San
Diego Union Tribune, May 10, 2021.
2021's Best Pleaces for Valentine's Day. WalletHub, February 2, 2021.
We're getting closer to having a Covid-19 vaccine. Hold onto that mask, though. San Diego
Union Tribune, October 25, 2020
Psychology of Pricing: How to Price you Products Effectively, The Do List, May 23, 2019
The Celebrity of Legalized Cannabis, Pacific San Diego, May 20, 2019
Marines may ditch 'The Few, the Proud' slogan, San Diego Union Tribune, October 11, 2016
The free-shipping wars have begun, San Diego Union Tribune, October 2013
The Young and The Promising, TheMarker magazine, 2011
Consumer Emotional Reactions to Changing Gas Prices, Ch. 10 News, August 2008
Jogging Down the Comeback Trail, San Diego Union Tribune, August 2007
Big Business and the Consumer, Jeremy Seville Comedy Hour, WealthTV 2007
Social Marketing, San Diego Union Tribune, May 2007
Trends in E-commerce, San Diego Business Journal, July 2006
Dating websites, San Diego Union Tribune, April 2006
Database marketing, Campus Technology, November 2005

Christmas shopping, Hartford Courant, December 2004

Service

PhD Committee

Uzma Khan, Yale SOM, 2005
Michael Liersch, UCSD Psychology, 2007
Elizabeth Keenan, UCSD, 2015
Coby Morvinski, UCSD, 2015 (Chair)
Charles Lin, UCSD Economics, 2015
Kristen Duke, UCSD (Chair)
Alicia Lieberman, UCSD (Chair)

Conferences

Program committee for: SCP, ACR, BDRM, SJDM
Conference Chair: SCP 2017

Reviewer

Journal of Marketing Research
Marketing Science
Journal of Experimental Psychology: General
Journal of Economic Psychology
Journal of Consumer Research
American Economic Review
Journal of Consumer Psychology
Memory and Cognition
Psychology and Marketing
Cognition
Journal of Behavioral Decision Making
Organizational Behavior and Human Decision Processes
Psychological Science
Journal of Personality and Social Psychology
Management Science
Journal of Economic Behavior and Organizations
Science

Member

Association for Consumer Research
Association for Consumer Psychology
Society for Judgment and Decision Making
American Psychological Society
American Marketing Association

Teaching Experience

Marketing Management (MBA, Executive)
Analytics in the wild (MBA, Executive)
Consumer Behavior (MBA, Executive)
Market Research (MBA, Executive)
Social Psychology (teaching fellow, Harvard)
E-Commerce Strategy (Executive)
Data Driven Decision Making (Executive)
Customized Executive Programs
Pricing (Executive)
Lab to Market (MBA, Executive)
Intro to Business (Graduate)
Branding (Executive)

Consulting and Executive Teaching Experience

Electronic Arts, HP Inc., Fiverr, Illumina, AAA, USAI, Cubic Corporation, Zimmer Dental, Life Technologies / Thermo Fisher, Intuit, WellBeat, Keiser Permanente, HP Software, Sony Entertainment, Applied Biosystems, Kumbaya App, Joyned, Marble, Themis-Tech.

APPENDIX B

PRIOR TESTIMONY

Prior Testimony

Town of Apple Valley v. Apple Valley Ranchos Water Company, Case No. CIV-DS-1600180, California Superior Court, San Bernardino. Retained by defendant. Deposed.

Arechiga v. Kellwood Company/Vince LLC, Case No. BC500988, Superior Court of California, County of Los Angeles. Retained by defendant. Deposed.

San Diego County Credit Union v. Citizens Equity First Credit Union, Case No. 3:18-CV-00967- GPC-MSB, United States District Court, Southern District of California. Retained by defendant. Deposed & court testimony.

Yamagata v. Reckitt Benckiser LLC, Case No. 3:17-cv-03529-VC, United States District Court, Northern District of California. Retained by defendant. Deposed.

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APPENDIX C

MATERIALS RELIED UPON

APPENDIX C
Materials Relied Upon**Legal Documents**

Defendant's Amended Objections and Responses to Plaintiffs' Interrogatories Set 9 (No. 36), *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, April 15, 2022

Expert Report of Bruce Schneier, *Chasom Brown, et al., Plaintiffs v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 4:20-cv-03664-YGR, April 15, 2022 (and Materials Cited Therein)

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Expert Report of Professor On Amir, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, April 15, 2022 (and Materials Cited Therein)

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Third Amended Complaint, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, February 3, 2022

Video-Recorded Deposition of Jeremy Davis, January 7, 2022

Videotaped Deposition of Chasom Brown, Thursday, January 13, 2022

Videotaped Deposition of Christopher Castillo, Tuesday, February 8, 2022

Videotaped Zoom Deposition of Lorraine Twohill, Friday, May 6, 2022

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GOOG-BRWN-00028191-8376

GOOG-BRWN-00067136-7266

GOOG-BRWN-00147709-7755

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“The Best Privacy Online,” *Brave*, available at <<https://perma.cc/TC6U-EHCJ>>, accessed on May 16, 2022

“Tip 6. Use Caution With Readability Formulas for Quality Reports,” May 2015, *Agency for Healthcare Research and Quality*, available at <<https://perma.cc/TM5Q-3MBJ>>, accessed on May 12, 2022

Clarke, Laurie, “Google Chrome’s Incognito Mode is Way Less Private Than You Think,” July 20, 2019, *Wired*, available at <<https://perma.cc/2HGJ-GWHN>>, accessed on May 12, 2022

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Godden-Payne, Craig, “How Google’s Homepage Has Changed Over the Last 20 Years,” March 14, 2020, *UX Collective*, available at <<https://perma.cc/7RFV-BEPK>>, accessed on May 16, 2022

Jarret, Caroline and Janice Redish, “Readability Formulas: 7 Reasons to Avoid Them and What to Do Instead,” July 29, 2019, *UXmatters*, available at <<https://perma.cc/FU9A-JV9L>>, accessed on May 12, 2022

Oppmann, Patrick, “In Digital World, We Trade Privacy for Convenience,” April 14, 2010, *CNN*, available at <<https://perma.cc/37D2-A7SU>>, accessed on May 13, 2022

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Schneier, Bruce, “‘Grassroots’ Bot Campaigns Are Coming. Governments Don’t Have a Plan to Stop Them,” May 20, 2021, *The Washington Post*, available at <<https://perma.cc/VB2M-5XDM>>, accessed on May 20, 2022

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Schneier, Bruce, “Why Was SolarWinds So Vulnerable to a Hack?” February 23, 2021, *New York Times*, available at <<https://perma.cc/A3C6-53JF>>, accessed on May 20, 2022

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“Browser Market Share United States of America, 2016-2022,” *StatCounter*, available at <<https://gs.statcounter.com/browser-market-share/all/united-states-of-america#yearly-2016-2022>>, accessed on May 20, 2022

EXHIBIT 3

**Redacted Version of
Document Sought to
be Sealed**

**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

CHASOM BROWN, *et al*, individually
and on behalf of all others similarly
situated,

Plaintiffs,

v.

GOOGLE LLC,

Defendant.

Case No. 5:20-cv-03664-YGR

SUPPLEMENTAL REPORT OF PROFESSOR ON AMIR

JUNE 30, 2022

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I. EXECUTIVE SUMMARY

1. On April 15, 2022, I submitted the Expert Report of Professor On Amir (“Amir Affirmative Report”), wherein I conducted a series of surveys to evaluate the understanding, perceptions, and expectations of users with respect to issues relevant to the facts of this matter (“Affirmative Studies”).¹ On May 20, 2022, I submitted the Rebuttal Report of Professor On Amir (“Amir Rebuttal Report”), wherein I responded to certain opinions presented in the reports submitted by Plaintiffs’ experts Bruce Schneier and Mark Keegan.² On May 20, 2022, Plaintiffs submitted the Expert Report of Mark Keegan: Rebuttal of Expert Report of Professor On Amir (“Keegan Rebuttal Report”).³ The Keegan Rebuttal Report included an “Analysis of the Amir Studies” and a new “Keegan Study.”⁴
2. As explained below, the Keegan Study is deeply flawed in numerous respects. Indeed, it is inherently biased and outcome-oriented—the antithesis of a reliable survey. But what is particularly striking about the Keegan Study is that, despite its obvious shortcomings, the Study nevertheless supports the results of my Affirmative Studies, showing that significant percentages of private browsing mode users are aware that private browsing mode does not prevent Google from receiving the data at issue. For example, the results of the Keegan

¹ Expert Report of Professor On Amir, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, April 15, 2022 (“Amir Affirmative Report”).

² Rebuttal Report of Professor On Amir, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, May 20, 2022 (“Amir Rebuttal Report”).

³ Expert Report of Mark Keegan: Rebuttal of Expert Report of Professor On Amir, *Chasom Brown, et al., Plaintiffs v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, May 20, 2022 (“Keegan Rebuttal Report”).

⁴ Keegan Rebuttal Report, Section IV, V.

Study show that, even when users are shown only the private browsing mode Splash Screen—and none of the other disclosures that Plaintiffs’ claim comprise their contract with Google, or the documents that describe how private browsing mode works—over a third of respondents agreed they were aware that “Google collects and saves my Internet browsing activity when I browse the Internet in private browsing mode.”⁵ Mr. Keegan further found that only “one-in-five respondents—20.2 percent—indicated a belief that they have not given consent to Google to collect and save their Internet browsing activity when they browse the Internet in PBM.”⁶ Had the Keegan Study been conducted consistent with industry standards, the extent to which his results support my studies would likely have been even greater.

3. The other striking aspect about the Keegan Study is the method he used to get to his opinion that 93.1% of private browsing mode users are “misinformed.”⁷ As demonstrated below, Mr. Keegan arrived at this figure by asking a series of questions—in the same order for every respondent—and eliminating the respondents as soon as they got an answer “wrong.”⁸ Such respondents were labeled “misinformed” and were not asked further questions. If a respondent got the answer “correct,” or indicated “Don’t know,” they advanced to the next question. Mr. Keegan then continued asking increasingly nuanced questions, eliminating more and more respondents who answered “incorrectly” and ensuring that the cumulative percentage of “misinformed” respondents would increase with

⁵ Keegan Rebuttal Report, Exhibit 5—Keegan Study—Tabulated Data.

⁶ Keegan Rebuttal Report, ¶ 187.

⁷ Keegan Rebuttal Report, ¶ 8.

⁸ Keegan Rebuttal Report, ¶¶ 172, 174, 176, 179.

each new question until he got to his 93.1% result. Had Mr. Keegan asked just one or a few more questions, he might have opined that 100% of users were misinformed. If Mr. Keegan were to use the reverse screening protocol (*i.e.*, screening out respondents once they give a response that Mr. Keegan deemed to be “informed” or “don’t know”), assuming each response option to each main question is selected at the same rate as in the Keegan Study results, he would find that 99 percent of respondents were “not misinformed.” If Mr. Keegan were to present his results in a standard way instead of his non-standard additive approach, his results would be much closer to the findings of the Affirmative Studies presented in the Amir Affirmative Report, despite the many other flaws in the Keegan Study.

4. Based on my experience, the materials I reviewed in this matter, and the studies I designed and conducted in this case, I have reached the following opinions with respect to the Keegan Study:

Opinion 1 (See Section IV)

5. Mr. Keegan’s survey design is non-standard, deeply flawed in numerous respects, and is inherently biased and outcome oriented. It imposed an identical series of main questions in the same order, for all respondents. After each question, those respondents who chose the answer option that Mr. Keegan considered as “misinformed” were not allowed to advance to the next question. Respondents who answered the question “correctly” or indicated that they “don’t know” or have “no opinion” were allowed to proceed to the next question. This survey design, which eliminates a portion of “misinformed” respondents after each question, requires perfection. Compounding this error, Mr. Keegan calculates a cumulative percentage of “misinformed” respondents out of the total respondents who took the survey, which leads to an artificially high percentage of “misinformed” respondents. Taken to the

extreme, any survey approach using Mr. Keegan's method would be able to find a large proportion of "misinformed" respondents simply by adding more questions to the survey.

6. In fact, the screening and analytical approach adopted in the Keegan Report appears to be designed to confirm a finding of "misinformed" respondents. Using the same data to extrapolate what would happen if Mr. Keegan were to apply the reverse screening protocol (screening out respondents once they give a response that Mr. Keegan deemed to be "informed" or "don't know") would result in a survey where 99 percent of respondents were not "misinformed."
7. Another artifact of Mr. Keegan's unconventional screening protocol is that the number of respondents and the statistical precision of his findings decreases as the survey progresses. Respondents were increasingly confused and unsure about their own answers, as shown by the increasing proportion of respondents who answered "Don't know" or "Don't know / No opinion" in later questions. Further, by filtering respondents out during the main questions rather than allowing all qualified respondents to answer each main question, Mr. Keegan also rendered it impossible to evaluate the reliability of the measures obtained from his survey.
8. Finally, after reanalyzing Mr. Keegan's data in a standard way, taking the number of "misinformed" respondents to a particular question divided by the number of respondents who were asked the same question, I found that the percentage of "misinformed" respondents decreased greatly, from "93.1 percent [...] are misinformed" as Mr. Keegan stated, to a range of 28% to 55% (even without accounting for other design flaws and biases of Mr. Keegan's survey). These findings are consistent with the conclusions I draw from my own Affirmative Studies.

Opinion 2 (See Section V)

9. Mr. Keegan asked all his questions in a context-free environment, failing to recognize, as I have noted in the Amir Affirmative Report that consumer understanding and perception are context-specific. Mr. Keegan asked respondents a variety of detailed and technical questions about consent and private browsing mode yet does not provide any information that would otherwise be available to respondents in the real world (such as the at-issue Google disclosures) to educate or remind respondents on how private browsing mode works in a valid way. Thus, Mr. Keegan’s survey-based conclusions with respect to consent, and his definition of respondents being “misinformed” based on such results, are invalid.

Opinion 3 (See Section VI)

10. In addition to the flaws discussed above, Mr. Keegan failed to follow several other critical best practices in survey design to ensure objectivity and to avoid “demand artifacts” (*i.e.*, respondents answer in the way they believe the survey-designer expects them to answer). These additional flaws include:
- a. Mr. Keegan’s survey questions are ordered instead of rotated. Respondents’ answers in later questions may be affected by the information obtained from answering earlier questions.
 - b. Mr. Keegan asked respondents to recall browser use in the last five years, which is a long time period and may result in recall bias.
 - c. Mr. Keegan’s questions were unclear. He asked “doubled-barreled” questions (for example, questions about “collect and save,” which are two different concepts), which is a major flaw in survey design.

- d. Mr. Keegan did not provide evidence showing that he took the necessary steps, such as pretesting, to ensure the quality and validity of his study. Nor did he include any follow-up questions to assess whether respondents could understand the survey questions and terms, view the images, and/or access the information they needed.
- e. Mr. Keegan did not ask any open-ended or follow up questions about awareness of lawsuits on similar topics or previous surveys recently taken on similar topics. Therefore, he was unable to assess the level of confusion in his study, nor could he assess how many of his respondents are “tainted” by lawsuit awareness or were recent survey takers.

II. QUALIFICATIONS

- 11. I am the Wolfe Family Presidential Endowed Chair in Life Sciences, Innovation, and Entrepreneurship, and Professor of Marketing at the Rady School of Management, University of California, San Diego. I have been a professor of marketing for the past nineteen years. I received my PhD in Management Science and Marketing from the Massachusetts Institute of Technology in 2003. From 2003 to 2005, I was an Assistant Professor of Marketing at Yale University. In 2005, I moved to help found the Rady School of Management at UC San Diego, where I was the first founding member of the marketing department and have served as an associate dean of academic programs.
- 12. I have taught Marketing Management, Pricing, Consumer Behavior, Business Analytics, Marketing Strategy, Market Research, Applied Market Research, Lab to Market, and Data Driven Decision Making at the MBA and Executive levels, as well as many specific programs for major corporations (both nationally and internationally). I have also taught

MBA Marketing Management courses at Northwestern University's Kellogg School of Management, Yale School of Management, Recanati School of Business of Tel Aviv University, IDC Herzelia, and Cheung Kong Graduate School of Business in Shanghai, China.

13. I have consulted with numerous companies in many industries on topics relating to market analysis, market research, business strategy, customer insights, branding, customer analysis, new product launches, pricing, promotions, and customer relationship management. I am also the Chief Behavioral Science Officer at Fiverr, Inc and serve on the advisory board of several companies.
14. I have published numerous highly cited and award-winning articles in leading marketing, management, and psychology journals, and I am often invited to lecture in leading business school and professional meetings. I have also designed and conducted hundreds of consumer surveys, both for my academic research and consulting work. My professional qualifications are described further in my curriculum vitae, which is attached as **Appendix A**.
15. I have also served as an expert witness in several cases, including consumer protection class actions. **Appendix B** lists matters where I have testified as an expert witness. I have also been retained on several cases that either settled or are ongoing.
16. My rate of compensation for this assignment is \$900 per hour. Individuals at Analysis Group, Inc., an economic and litigation consulting firm headquartered in Boston, Massachusetts, performed part of the work for this assignment under my direction. No compensation is contingent upon the outcome of this research or of the case.

III. ASSIGNMENT

17. I understand that Plaintiffs Chasom Brown *et al.* (“Plaintiffs”) brought this case against Google LLC (“Google”).⁹ On April 15, 2022, I submitted the Expert Report of Professor On Amir (“Amir Affirmative Report”), wherein I conducted a series of surveys to evaluate the understanding, perceptions, and expectations of users with respect to issues relevant to the facts of this matter.¹⁰ On May 20, 2022, I submitted the Rebuttal Report of Professor On Amir (“Amir Rebuttal Report”), wherein I responded to certain opinions presented in the reports submitted by Plaintiffs’ experts Bruce Schneier and Mark Keegan.¹¹
18. On May 20, 2022, Plaintiffs submitted the Expert Report of Mark Keegan: Rebuttal of Expert Report of Professor On Amir (“Keegan Rebuttal Report”).¹² The Keegan Rebuttal Report included an “Analysis of the Amir Studies” and a new “Keegan Study.”¹³
19. In this report, I have been asked to review and respond to opinions relating to the Keegan Study and accompanying analyses presented in the Keegan Rebuttal Report. I understand that pursuant to an agreement by the parties and approval by the Court, I am only narrowly allowed to present rebuttals to the Keegan Study and related analyses. The absence of any other rebuttal to the Keegan Rebuttal Report (or reports submitted by other experts) in this report does not mean that I agree with them.

⁹ See Third Amended Complaint, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, February 3, 2022 (“TAC”).

¹⁰ Amir Affirmative Report.

¹¹ Amir Rebuttal Report.

¹² Keegan Rebuttal Report.

¹³ Keegan Rebuttal Report, Section IV, V.

IV. MR. KEEGAN’S SURVEY-BASED METHOD TO IDENTIFY “MISINFORMED” RESPONDENTS IS BIASED AND FLAWED, RENDERING UNRELIABLE ANY CONCLUSIONS DRAWN FROM THE RESULTS

20. Mr. Keegan’s survey design screened out respondents who Mr. Keegan labels as “misinformed” for each of his main questions (Q15, Q16, Q17, Q19, Q20). As discussed in this section, this survey design is non-standard, deeply flawed in numerous respects, and is inherently biased and outcome oriented. Since Mr. Keegan chose to analyze the data in a way that eliminates respondents in each main question and then calculates a cumulative percentage of “misinformed” respondents out of the total respondents who took the survey (which is not the number of people who actually responded to any question but the first), this analytical choice (particularly when coupled with confusing, context-free questions as discussed in **Section V** and **Section VI**) leads to an artificially high percentage of “misinformed” respondents by simply adding more questions to the survey. In fact, after reanalyzing Mr. Keegan’s data in a standard way (which uses the number of people asked the given question as the denominator to calculate the percentage of “misinformed” respondents in each question), I found that the percentage of allegedly “misinformed” respondents decreased greatly, from “93.1 percent [...] are misinformed” as Mr. Keegan stated, to a range of 28% to 55%, even before accounting for other design flaws and biases of Mr. Keegan’s survey. Another artifact of Mr. Keegan’s unconventional screening protocol within his main questionnaire is that the number of respondents and the quality of the respondents decreases as the survey progresses. Respondents were increasingly confused and unsure about their own answers, as shown by the increasing proportion of respondents who answered “Don’t know” or “Don’t know / No opinion” in later questions. Further, by filtering respondents out during the main questions rather than allowing all

qualified respondents to answer each main question, Mr. Keegan also rendered it impossible to evaluate the reliability of the measures obtained from his survey. Setting aside these issues, a proper analysis of responses to the questions in the Keegan Study nonetheless yields findings that are consistent with the conclusions I draw from my own Affirmative Studies.

A. Summary of Keegan Study Design

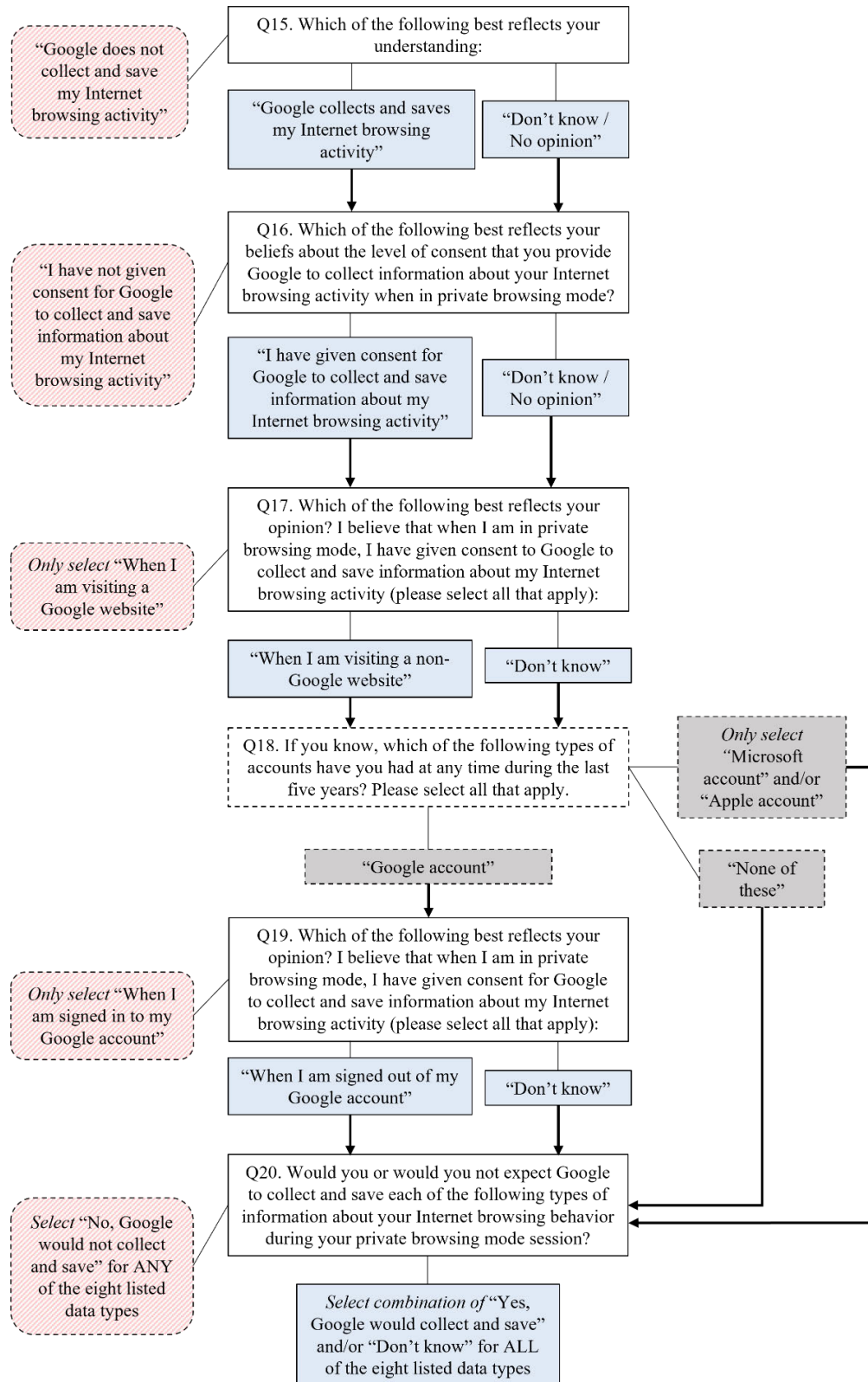
21. Mr. Keegan claimed that “93.1 percent [...] are misinformed about Google’s [private browsing mode (“PBM”)] data collection and storage practices” and only “6.9 percent [...] provided responses indicating that they believed they understood and consented to Google’s PBM data collection and storage practices (or do not know).”¹⁴ However, the 6.9% of respondents who “indicat[ed] that they believed they understood and consented” was based on a non-standard and flawed survey design, which created an artificially high percentage of “misinformed” respondents.¹⁵
22. Specifically, Mr. Keegan’s conclusion is based on a series of main questions that he asked every respondent in the same order. After each question, those who chose the answer option that Mr. Keegan considers as “misinformed” were not allowed to advance to the next question. Respondents who answered the question “correctly” or indicated that they “don’t know” or have “no opinion” were allowed to proceed to the next question. Thus, every question eliminates a number of “misinformed” respondents. Because Mr. Keegan eliminates respondents in each main question and then calculates a cumulative percentage

¹⁴ Keegan Rebuttal Report, ¶ 185.

¹⁵ Keegan Rebuttal Report, ¶ 185.

of “misinformed” respondents out of the total respondents who took the survey, the more questions Mr. Keegan asks, the more the percentage of “misinformed” respondents will necessarily increase.

23. **Figure 1** summarizes Mr. Keegan’s main questions and the screening criteria. Mr. Keegan’s conclusion that 93.1% of respondents were misinformed is based on the cumulative number of respondents who got one question wrong (*i.e.*, “misinformed” about any one of the main questions). In other words, Mr. Keegan’s calculation of the percentage of “not misinformed” takes only the number of respondents who got the “right” answer (n=73) in the last of the series of main questions and erroneously divides that number by the total number of respondents (n=1,052) who started the main portion of the questionnaire.

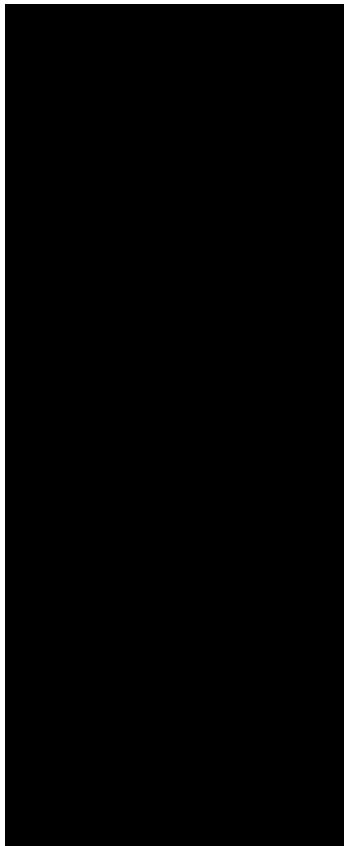
Figure 1. Summary of Mr. Keegan's Survey Design

Source: Keegan Rebuttal Report, ¶¶ 171-180.

B. Mr. Keegan’s Survey Design Sequentially Screens Out “Misinformed” Respondents Which Forces Perfection, Artificially Biases Mr. Keegan’s Results, and Overinflates the Percentage of Respondents Who Were “Misinformed”

24. Mr. Keegan’s survey design that terminates respondents who selected certain response options, accompanied with analyzing the ensuing data obtained from such a survey design in a misleading way, leads to biased and unreliable conclusions about consumer perceptions or expectations.
25. With Mr. Keegan’s flawed design, one will find more “misinformed” respondents simply by asking more questions. **Table 1** recreates Mr. Keegan’s Table 6, with an additional column showing the cumulative percentage of misinformed respondents after each question. The cumulative percentage, by definition, can only increase. For as long as *any* respondent gets *any* question wrong, using Mr. Keegan’s method, the percentage of misinformed responses will increase as more questions are asked. Mr. Keegan’s conclusion that [REDACTED] of respondents were misinformed is based on the cumulative percentage of respondents who got any one main question wrong. If Mr. Keegan’s survey stopped at Q16, he would have found that [REDACTED] of respondents were misinformed, and if he stopped at Q17, he would have found that [REDACTED] of respondents were misinformed. If Mr. Keegan added more questions, he would have been able to find an even higher percentage of respondents, even close to [REDACTED], who were misinformed.

Table 1. Re-Analysis of Mr. Keegan’s Table 6 with Cumulative Percentage of “Misinformed” Respondents

Question	Responses that Mr. Keegan Categorized as “Misinformed”	Percentage of “Misinformed” Respondents	
		Keegan Report Table 6	Cumulative Percentage
Q15. Which of the following best reflects your understanding:	“Google does not collect and save my Internet browsing activity in private browsing mode”		
Q16. Which of the following best reflects your beliefs about the level of consent that you provide Google to collect information about your Internet browsing activity when in private browsing mode?	“I have not given consent to Google to collect and save my Internet browsing activity when I browse the Internet in PBM”		
Q17. I believe that when I am in private browsing mode, I have given consent for Google to collect and save information about my Internet browsing activity (please select all that apply)	<i>Only</i> select “When I am visiting a Google website” (one of three multiple choice options)		
Q18. If you know, which of the following types of accounts have you had at any time during the last five years? Please select all that apply. ¹⁶	n/a		
Q19. I believe that when I am in private browsing mode, I have given consent for Google to collect and save information about my Internet browsing activity (please select all that apply)	<i>Only</i> select “When I am signed in to my Google account” (one of three multiple choice options)		
Q20. Would you or would you not expect Google to collect and save each of the following types of information about your Internet browsing behavior during your private browsing mode session?	Indicated a belief that Google would not collect and save at least one type of data displayed in the matrix table		

Source: Keegan Rebuttal Report, Exhibit 6–Keegan Study–Untabulated Data.

26. To better understand how such a design employing sequential screening would lead to biased and unreliable conclusions about perceptions or expectations, consider the example of finding a family doctor. Following the same logic as in Mr. Keegan’s survey, to find a

¹⁶ Note that respondents who indicated they had a Google Account answered Q19, while respondents who did not indicate they had a Google Account instead skipped to Q20 (they were not screened out of the survey).

qualified family doctor, one would ask a series of questions and eliminate the person based on their answers. For example, the first question could be “Is your practice located in New York?” Only those physicians answering “yes” would proceed. The next question could be “Do you accept BlueCross BlueShield insurance?” or “Have you worked with a patient with diabetes?” Again, only those answering “yes” would proceed. Then one could continue this process by asking more questions to test the potential family doctor’s medical knowledge such as, “Does COVID-19 mRNA vaccine instruct cells to make the S protein?” or “Should I send my toddler to an emergency room if she has a fever of 102.2°F?” As the number of questions increases, the pool of remaining candidate family doctors would decrease through such an inflexible process of elimination. If the potential family doctor also were not able to consult any outside material and were forced to rely on their memory alone (as Mr. Keegan requires of his survey respondents) even more physicians would be eliminated. Similarly, the determination of whether a respondent is “misinformed” as defined by Mr. Keegan’s sequential selection process is overly restrictive and magnified by reliance on respondent memory.

27. In fact, the screening and analytical approach adopted in the Keegan Report appears to be engineered to confirm a finding of “misinformed” respondents. To illustrate the ability of his approach to engineer desired results with any given hypothesis, consider the alternative hypothesis that people were *not* misinformed. To find a large number of respondents who were not misinformed, one could simply define a “not misinformed” respondent as a respondent who answered any of the five questions with a response other than the “misinformed” answer (*i.e.*, selected a “not misinformed” or “don’t know” response option

at least once).¹⁷ Under this scenario, assuming each response option to each main question is selected at the same rate as in Mr. Keegan's survey results, one would find that [REDACTED] of respondents were "not misinformed."¹⁸ Note that Mr. Keegan's survey represents one extreme where the definition of "misinformed" is a respondent who got *any* of the five questions wrong, and Mr. Keegan was able to find [REDACTED] of respondents who were "misinformed." However, the scenario discussed in this paragraph represents the other extreme where the definition of "misinformed" is a respondent who got *all* five questions wrong, and this scenario was able to find less than [REDACTED] of respondents who were "misinformed." Between these two extremes, there are many different combinations of how many questions one would allow the respondents to get wrong before one considers them as "misinformed." With different definitions of "misinformed" respondents, Mr. Keegan's sequential screening and analytical approach can be manipulated to generate any desired result.

¹⁷ Under this alternative definition, a "misinformed" respondent would have answered all five questions wrong (*i.e.*, selected the "misinformed" response option).

¹⁸ See Exhibit 1.a ("Mr. Keegan Could Have Chosen the Other Extreme to Define "Not Misinformed" and Generated Dramatically Different Results") for calculations. For example, the first row of the table starts with the 1,052 respondents who took the Keegan Study. In his survey, [REDACTED] of respondents ([REDACTED] respondents) answered the "informed" response or "Don't know / No opinion" to Q15. In other words, [REDACTED] respondents were "not misinformed" in this question. Since [REDACTED] of respondents answered the "informed" response or "Don't know / No opinion" to this question and are screened out of this exercise, the remaining [REDACTED] or [REDACTED] projected "misinformed" respondents would be able to move on to the next question. The second row starts with [REDACTED] projected respondents. In the Keegan Study, [REDACTED] of respondents answered the "informed" response or "Don't know / No opinion" to Q16. Applying this percentage to the [REDACTED] projected respondents at the start of this row, [REDACTED] projected respondents are "not misinformed" in this question. Adding those [REDACTED] to the [REDACTED] from Q15, [REDACTED] cumulative projected respondents are now "not misinformed," or in other words, have now answered the "informed" response or "Don't know / No opinion" to a question. These [REDACTED] projected respondents comprise [REDACTED] of the 1,052 total respondents who took the survey. Since [REDACTED] of respondents answered the "informed" response or "Don't know / No opinion" to this question and are screened out of this exercise, the remaining [REDACTED] or [REDACTED] projected "misinformed" respondents would be able to move on to the next question. The third row starts with these [REDACTED] projected respondents and the calculations continue as described. Even if one were to impose that responses of "Don't know" or "Don't know / No opinion" are not counted as "not misinformed," one would still find that [REDACTED] percent of respondents were "not misinformed" (Exhibit 1.b).

28. Additionally, even if one were to agree with Mr. Keegan’s definition of “misinformed” respondents as someone who got any of the five questions wrong, such a definition is biased due to the way Mr. Keegan presented the answer options to respondents. In Mr. Keegan’s survey, respondents were only given binary answer options (*i.e.*, yes or no), plus a “Don’t know” or “Don’t know / No opinion” answer option. Respondents were not given a spectrum of answer options that reflects a variation of understanding.¹⁹ For example, for Q15, “Which of the following best reflects your understanding,” between “Google does not collect and save my Internet browsing activity” and “Google collects and saves my Internet browsing activity,” some respondents may understand “Google *likely* collects and save my Internet browsing activity” or “Google *unlikely* collects and save my Internet browsing activity.” Indeed, as my Consumer Perceptions and Expectations Survey shows, ■■■ of respondents expect that companies that provide analytics and advertising services to websites visited *probably* receive the data from the private browsing session.²⁰ Mr. Keegan’s dichotomous scale is inappropriate and inconsistent with the survey literature in privacy. Scales with multiple levels are frequently used in this area, which

¹⁹ According to Diamond, “[i]f the respondent is asked to choose one response from among several choices, the response chosen will be meaningful only if the list of choices is exhaustive—that is, if the choices cover all possible answers a respondent might give to the question. If the list of possible choices is incomplete, a respondent may be forced to choose one that does not express his or her opinion.” Diamond, Shari S., “Reference Guide on Survey Research,” in *Reference Manual on Scientific Evidence*, Third Edition, 2011, The National Academies Press, pp. 359-423 (“Diamond (2011)”), p. 393; Malhotra, Naresh K., “Questionnaire Design and Scale Development,” in *The Handbook of Marketing Research*, Grover, Rajiv and Marco Vriens, eds., 2006, Sage Publications, pp. 83-94 (“Malhotra (2006)”), p. 87. In particular, Diamond notes that “[o]ne form of closed-ended question format that typically produces some distortion is the popular agree/disagree, true/false, or yes/no question. [...] [T]he format is also seriously problematic.” Diamond (2011), p. 394.

²⁰ Amir Affirmative Report, Table 2.

capture variation.²¹ By forcing respondents to choose between limited options that do not reflect any variation of understanding, Mr. Keegan's results cannot reflect actual consumer perceptions and expectations.

29. Moreover, Mr. Keegan's Q20 presents eight types of information on the same page, which creates demand artifacts.²² When respondents are asked to provide responses to a list of many items on the same page, respondents might think that they need to answer differently across the items. In this case, Mr. Keegan overinflates the number of "misinformed" respondents with this design as his "correct" answer would involve respondents answering "Yes" to all eight data types. However, literature shows that test takers "have the tendency to avoid a run of answers on a multiple-choice exam."²³ Test takers generally believe that

²¹ See, Smith, Jeff H., et al., "Information Privacy: Measuring Individuals' Concerns About Organizational Practices," *Management Information Systems Research Center of the University of Minnesota*, 1996, pp. 167-196. See also, Grosso, Monica, et al., "What Information Do Shoppers Share? The Effect of Personnel-, Retailer, and Country-Trust on Willingness to Share Information," *Journal of Retailing*, 2020, pp. 524-547; Bearden, William O. and Michael J. Etzel, "Reference Group Influence on Product and Brand Purchase Decisions," *Journal of Consumer Research*, 1982, pp. 183-194; Sheng, Hong, et al., "An Experimental Study on Ubiquitous Commerce Adoption: Impact of Personalization and Privacy Concerns," *Journal of the Association for Information Systems*, 2008, pp. 344-376.

²² Keegan Rebuttal Report, Exhibit 4—Keegan Study—Questionnaire. Q20 asks, "Please think of the time(s) that you have used private browsing mode to browse the Internet in the last five years. Would you or would you not expect Google to collect and save each of the following types of information about your Internet browsing behavior during your private browsing mode session?"

For each type of information in the list below, respondents were given the option to select "Yes, Google would collect and save," "No, Google would not collect and save," or "Don't know."

- URL information
- HTTP information
- Cookies
- Your browsing activity
- Your IP address
- Your user agent
- Your geolocation
- Your unique user ID

²³ Lee, Chan J., "The Test Taker's Fallacy: How Students Guess Answers on Multiple-Choice Tests," *Journal of Behavioral Decision Making*, 2018 ("Lee (2018)"), pp. 1-12, p. 4.

the creator of a test will be unlikely to impose the same correct answer option in several consecutive choices.²⁴ In other words, when presented with a list of consecutive questions, respondents will likely be hesitant to select the same answer option for every question. Therefore, Mr. Keegan's design encourages respondents to answer a mixture of *not* "misinformed" ("Yes" or "Don't know") and "misinformed" ("No") responses, which a quarter of his respondents did.²⁵ By answering "No" to at least one data type, a respondent is counted as "misinformed." In other words, by presenting all eight types of information on the same page, Mr. Keegan likely inflates the number of "misinformed" respondents.

C. Mr. Keegan's Flawed Filtering Method Decreases Both the Size and the Quality of His Sample

30. One issue associated with Mr. Keegan's flawed filtering design is that his sample size drops throughout the questions in the survey. Only 102 respondents of the 1,052 respondents who started the main questionnaire portion of the survey actually made it to the last of the main questions (Q20). See **Table 2** below. Thus, the statistical precision of Mr. Keegan's estimate of misinformed respondents decreases as the survey progresses.
31. Further, while Mr. Keegan filtered out "misinformed" respondents at each of his main questions, he carried forward respondents who answered "Don't know" or "Don't know / No opinion" in the main questions (See **Figure 1** above). With this flawed method, respondents could "pass the test" simply by not knowing the response or being confused

²⁴ "This finding shows that, in general, test takers think that test makers avoid a run." Lee (2018)..

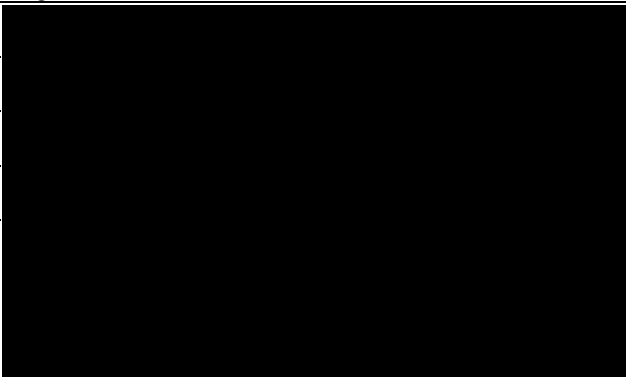
²⁵ Out of the [REDACTED] respondents who were presented with Q20, [REDACTED] ([REDACTED] of respondents selected "No, Google would not collect and save" for at least one data type, and [REDACTED] ([REDACTED] respondents selected "No, Google would not collect and save" for all eight data types. Thus, [REDACTED] ([REDACTED] respondents selected a mixture of *not* "misinformed" ("Yes" or "Don't know") and "misinformed" ("No") responses. Also note that [REDACTED] ([REDACTED] respondents selected "Yes, Google would collect and save" for all eight data types, and [REDACTED] ([REDACTED] respondents selected "Don't know" for all eight data types. Keegan Rebuttal Report, Exhibit 6–Keegan Study–Untabulated Data.

by the questions.²⁶ As shown in **Table 2**, the proportion of respondents who answered “Don’t know” or “Don’t know / No opinion” increased as the survey progressed. This suggests that respondents were increasingly confused and unsure about their own answers. More and more people “pass the test” simply by not having a definitive answer.

32. Moreover, of the ■■■ respondents who reached Q20, almost a quarter answered “Don’t know” or “Don’t know / No opinion” in all the preceding main questions. Of these respondents who reached Q20 by selecting “Don’t know” or “Don’t know / No opinion,” almost half selected “Don’t know” in Q20 in all eight types of information. Because Mr. Keegan’s survey questions were unclear and included undefined technical language (see **Section VI.C**), had binary answer options (see **Section IV.B**), and because Mr. Keegan did not pretest (see **Section VI.D**), a respondent choosing “Don’t know” or “Don’t know / No opinion” might intend that answer to reflect that (a) that they do not have enough information to answer the question, (b) they don’t remember or care to remember, or (c) were uncertain of their understanding of the particular question or answer options. These survey design flaws make it impossible to evaluate what respondents had in mind when choosing “Don’t know” and are indicative of potentially broader survey design issue.

²⁶ See **Section IV**.

**Table 2. Percent of Respondents Who Selected
“Don’t know” or “Don’t know / No opinion” in Each Question**

Questions	Number of Respondents Who Answered the Question	Number of Respondents Who Answered “Don’t Know”	Percentage
Q15.			
Q16.			
Q17.			
Q19.			
Q20.			
Selected “Don’t know” for all types of information			
Selected “Don’t know” for at least one type of information			

Source: Keegan Rebuttal Report, Exhibit 6–Keegan Study–Untabulated Data.

33. Further, by filtering respondents out during the main questions rather than allowing all qualified respondents to answer each main question, Mr. Keegan also makes it impossible to check his survey for the reliability of his measures. If a researcher tests multiple questions simultaneously to measure a concept and respondents have the chance to answer all of these questions, one has the opportunity to check the reliability of the measures.²⁷ Since Mr. Keegan removes respondents once they provide a “misinformed” response and respondents do not have a chance to answer all the main questions, it is impossible to evaluate the reliability of the measures he used.²⁸

²⁷ There are multiple measures that evaluate reliability of a given scale. See DeVellis, Robert F., and Carolyn T. Thorpe, “Scale Reliability” in *Scale Development: Theory and Applications*, 5th edition, 2021, Sage Publications, pp. 33-70.


²⁸ See e.g., Tan, Seref, “Misuses of KR-20 and Cronbach’s Alpha Reliability Coefficients,” *Education and Science*, Vol. 34, No. 152, 2009, pp. 101-112. See also, Turow, Joseph, et al., “Consumers’ Understanding of Privacy Rules in the Marketplace,” *Journal of Consumer Affairs*, Vol. 42, No. 3, 2008, pp. 411-424, pp. 417-418.

D. Mr. Keegan's Survey Results, When Analyzed Properly, Are Consistent with the Conclusions from My Affirmative Studies

34. To arrive at his conclusion that [REDACTED] of his respondents are “misinformed,” Mr. Keegan calculated the number of respondents who answered one of the five questions wrong and divided this number by the total number of respondents (n=1,052). He fails to acknowledge that as his survey progresses, fewer and fewer respondents remain.²⁹ While all 1,052 answer his first main question (Q15), only [REDACTED] respondents answer his last main question (Q20). As I discussed in **Section IV.A**, this method is statistically flawed and inflates the percentage of misinformed respondents.
35. In **Table 3**, I re-analyzed the percentages in Mr. Keegan's Table 6 in a standard way. Rather than employing the non-standard additive approach adopted by Mr. Keegan, I present the percentage of “misinformed” respondents out of the number of respondents who answered each respective question. Numbers included in parentheses are the calculated [REDACTED] confidence interval of the results. If one divides the number of “wrong” responses by the number of respondents who actually answered a question, the number of “misinformed” respondents in each question is [REDACTED]. In fact, the adjusted percentages are much closer to the findings of the Affirmative Studies presented in the Amir Affirmative Report, despite the many other flaws in Mr. Keegan's survey.

²⁹ See **Section IV.B** and **Table 2**.

Table 3. Replication and Re-Analysis of Mr. Keegan’s Table 6 of “Misinformed” Respondents

Responses that Mr. Keegan Categorized as “Misinformed”	Number of Respondents Who Answered the Question	Cumulative Percentage of “Misinformed” Respondents of Keegan Report Table 6³⁰	Adjusted Percentage of “Misinformed” Respondents³¹
Q15. Google does not collect and save my Internet browsing activity in private browsing mode			
Q16. I have not given consent to Google to collect and save my Internet browsing activity when I browse the Internet in PBM			
Q17. I have given consent to Google to collect and save my Internet browsing activity in PBM only when visiting a Google website			
Q18. n/a			
Q19. I have given consent to Google to collect and save my Internet browsing activity in PBM only when signed in to my Google account ³²			
Q20. Indicated a belief that Google would not collect and save at least one type of data displayed in the matrix table			

Note:

[1] Numbers included in parentheses are the calculated 95% confidence interval of the results.

Source: Keegan Rebuttal Report, Exhibit 6–Keegan Study–Untabulated Data.

³⁰ 95% confidence interval are shown in the parentheses. The confidence intervals are the Clopper-Pearson confidence interval for proportions. They are calculated using the “ci” command in Stata with the proportions option. See “ci — Confidence intervals for means, proportions, and variances,” *Stata.com*, available at <<https://www.stata.com/manuals/rci.pdf>>.

³¹ 95% confidence interval are shown in the parentheses. The confidence intervals are the Clopper-Pearson confidence interval for proportions. They are calculated using the “ci” command in Stata with the proportions option. See “ci — Confidence intervals for means, proportions, and variances,” *Stata.com*, available at <<https://www.stata.com/manuals/rci.pdf>>.

³² Q19 was shown only to respondents who indicated in Q18 that they had a Google Account. Q20 was shown to (i) respondents who indicated in Q18 that they had a Google account and answered Q19 “correctly”, and (ii) respondents who indicated in Q18 that they did not have a Google Account. As a result, more respondents saw Q20 than Q19.

E. Mr. Keegan’s Conclusion that [REDACTED] of Respondents Are “Misinformed” Is Inconsistent with Internal Google Research

[CONFIDENTIAL - SUBJECT TO PROTECTIVE ORDER]

36. Mr. Keegan’s conclusion that “nearly all potential Class Members—[REDACTED]—are misinformed about Google’s PBM data collection and storage practices based on the allegations in the Complaint”³³ is also inconsistent with internal Google studies, which show that a minority of users believe Google does not receive their data while in Incognito mode. One study found that only [REDACTED] of Incognito users and [REDACTED] of non-Incognito users believe that Google will never collect data about what they are doing when they are in a private browsing mode.³⁴ The study also asked respondents, “In what ways are you currently using Incognito Mode?” No single option was chosen by a majority of Incognito users surveyed and the top three responses were: “Protect myself from hackers and other online threats,” “Prevent activity or login information from being saved to my browser,” and “Prevent activity or login information from being saved to my device.”³⁵ The choice “Hide my online activity from Google” was selected by approximately [REDACTED] of users, the ninth most popular choice.³⁶ Another study asked about the most important feature when using private browsing mode in any application and found that the top two responses were: “[t]o get privacy from people who can see or share my devices” and “[m]y searches won’t show up in my history.”³⁷

³³ Keegan Rebuttal Report, ¶ 185.

³⁴ GOOG-BRWN-00477546-7604, at 7554.

³⁵ GOOG-BRWN-00477546-7604, at 7558.

³⁶ GOOG-BRWN-00477546-7604, at 7558.

³⁷ GOOG-BRWN-00028191-8376, at 8327.

37. Mr. Keegan cited Google research that shows that “most users are not aware of session-based tracking” and that a “majority of users expect no session-based tracking.”³⁸ However, the same research from Google suggests that the percentage of respondents who are *not* “misinformed” is at least [REDACTED] and much higher in some areas of understanding of private browsing mode.³⁹ Mr. Keegan’s finding of only [REDACTED] of respondents that were *not* “misinformed” is inconsistent with evidence from Google.⁴⁰

V. MR. KEEGAN FAILED TO PROVIDE RESPONDENTS WITH RELEVANT CONTEXT AND THEREFORE FAILS TO EMPIRICALLY EXAMINE CONSUMER UNDERSTANDING IN A VALID WAY

38. Mr. Keegan claims that his study shows that “it is clear both that a reasonable member of each of the two Classes and virtually all Class Members would not have understood or believed that they had consented to Google’s collection and storage of their private browsing data.”⁴¹ However, as discussed in the Amir Affirmative Report and the Amir Rebuttal Report, consumer understanding, perception, and preferences for privacy are context-specific.⁴² Moreover, context may affect choice outcome by affecting the decision making process.⁴³ In survey research, providing respondents with different information affects how respondents interpret the question, invoke different relevant prior knowledge,

³⁸ Keegan Rebuttal Report, ¶ 197; GOOG-BRWN-00042388-2418, at 2404.

³⁹ GOOG-BRWN-00042388-2418, at 2404.

⁴⁰ Keegan Rebuttal Report, ¶ 185 and Table 6; GOOG-BRWN-00042388-2418, at 2404.

⁴¹ Keegan Rebuttal Report, ¶ 7.

⁴² Amir Affirmative Report, ¶¶ 45-48. Amir Rebuttal Report, ¶¶ 65-66.

⁴³ Thomadsen, Raphael, et al., “How Context Affects Choice,” *Customer Needs and Solutions*, 5(1-2), 2018, pp .4-15, p. 5.

and bring in different background knowledge.⁴⁴ Mr. Keegan’s survey attempts to study respondents’ understanding of Google’s data collection and their consent to that collection, in the context of using private browsing mode. However, Mr. Keegan fails to provide respondents relevant context and information, specifically the documents through which users provide their consent and that explain how private browsing modes work, rendering his findings invalid.

39. First, three of the Keegan Study’s main questions, Q16, Q17, and Q19, ask about “consent.”⁴⁵ However, Mr. Keegan cannot effectively test whether users believe they had consented to Google’s collection and storage of their data without providing respondents the documents or disclosures through which such consent was obtained. I understand that these disclosures may include the Google Privacy Policy, the Chrome Privacy Notice, and that the “Learn More” page that is linked to the Incognito Splash Screen is also relevant.⁴⁶ Without showing respondents these documents or disclosures that describe the data flow at issue, it is unclear what respondents’ understanding of “consent” means, and whether respondents’ understanding of “consent” is relevant to this matter. Thus, Mr. Keegan’s results with respect to consent, and his definition of respondents being “misinformed” based on such results, are invalid.
40. Further, Mr. Keegan asked respondents a variety of detailed and technical questions about private browsing mode without having educated or reminded respondents how private browsing mode works. The only information Mr. Keegan presented to respondents is the

⁴⁴ National Research Council, *Cognitive Aspects of Survey Methodology: Building a Bridge Between Disciplines*, Washington, DC: The National Academies Press. 1984, pp. 1-176, pp. 77-78.

⁴⁵ Keegan Rebuttal Report, Exhibit 4–Keegan Study–Questionnaire and Exhibit 5–Keegan Study–Tabulated Data.

⁴⁶ See TAC, ¶¶ 268-269.

Incognito Splash Screen.⁴⁷ However, in the real world, a user could access information about Google’s collection of data in the Google Privacy Policy, or could read Google’s descriptions of how private browsing mode works upon opening a private browsing window (such as the “Learn More” pages) or by reading the Chrome Privacy Notice (which Plaintiffs also allege is part of their contract with Google). I understand that Plaintiffs allege they reviewed and relied on some of these documents in forming their beliefs about how private browsing works.⁴⁸ In the Keegan Study, respondents were not able to access such information. In other words, Mr. Keegan’s survey design does not allow interested respondents to educate themselves using the relevant Google disclosures on which Plaintiffs purport to base their claims.⁴⁹

VI. MR. KEEGAN DID NOT FOLLOW ADDITIONAL BEST PRACTICES IN SURVEY DESIGN, AFFECTING THE RELIABILITY OF HIS SURVEY RESULTS

41. In addition to the flaws discussed above, Mr. Keegan failed to follow several other critical best practices in survey design to ensure objectivity and to avoid “demand artifacts” (*i.e.*, respondents answer in the way they believe the survey-designer expects them to answer).

⁴⁷ See Amir Affirmative Report. In each of my studies, respondents were provided with information about private browsing through materials that a user could access upon opening a private browsing window, such as the “Learn More” pages. In my Consumer Perceptions and Expectations study, respondents in the Safari group did not see a “Learn More” page because there is no such page involved with the organic user experience for Safari.

⁴⁸ See Zoom Videotaped Deposition of William Byatt, December 20, 2021 (“Byatt Tr.”), at 113:15-19, 116:21-118:7, 120:11-122:18. See also, Videotaped Deposition of Chasom Brown, Thursday, January 13, 2022 (“Brown Tr.”), at 106:18-107:5, 112:3-22; Byatt Tr., at 99:23-100:1; Video-Recorded Deposition of Jeremy Davis, January 7, 2022, at 106:13-24; Virtual Videoconference Video-Recorded Deposition of Monique Trujillo, Friday, February 11, 2022, at 206:21-207:23.

⁴⁹ “With regards to the question of what I may have reviewed in the past, I have certainly reviewed the entire privacy policy at times in the past.” Byatt Tr., at 113:15-19; “Q. [...] Do you recall reviewing the Google privacy policy before you were involved in this litigation? A. Yes. [...] Q. [...] And do you recall when you reviewed it? A. I don’t recall specifically when, but it’s been multiple times. Q. Would it have been at least at the time that you opened your account? A. At least that, yes.” Brown Tr., at 106:18-107:5.

In this section, I discuss methodological problems that impact every aspect of the Keegan Study, including the question order, the period of recall, question design, and a failure to implement standard quality checks.

A. Mr. Keegan’s Survey Questions Are Ordered Instead of Rotated, Which Leads Respondents to Answer in a Certain Way

42. Professor Shari Diamond, a leading expert on empirical research and survey design for litigation and cited by Mr. Keegan, affirms that “[t]he order in which questions are asked on a survey and the order in which response alternatives are provided in a closed-ended question can influence the answers.”⁵⁰ Therefore, rotating questions and answer options is important to avoid order effects, whereby previous answers influence the next answers in a survey.⁵¹ However, the order of Mr. Keegan’s main questions is not randomized.⁵² All respondents saw his main questions in the same order and were filtered out sequentially if Mr. Keegan deemed the respondents to be “misinformed.” For respondents that continued in the survey, the survey suffered from priming where respondents may have answered subsequent questions based on what they saw in earlier questions.⁵³ If Mr. Keegan used a

⁵⁰ Diamond (2011), p. 395.

⁵¹ Diamond (2011), p. 396; Mr. Keegan himself acknowledges the importance of rotating questions and answer options. Keegan Rebuttal Report, ¶¶ 149, 152; Expert Report of Mark Keegan, *Chasom Brown, et al., Plaintiffs v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, April 15, 2022, ¶¶ 38, 41.

⁵² Keegan Rebuttal Report, Exhibit 6–Keegan Study–Untabulated Data. While there are variables indicating randomized response option display orders, such as “Q20_DO_1,” for example, there is no indication of main questions having been randomized.

⁵³ “Survey researchers recognize that their instruments may be susceptible to producing unintended priming effects that could bias key measurements. Inadvertent priming can occur when information presented in one part of the survey activates ideas that are then given increased weight in answering subsequent questions. [...] respondents may choose [...] to reduce their cognitive effort by answering with whatever seemingly relevant information is immediately accessible, including information that may have been primed in earlier parts of the survey. [...] To

different question order, his findings likely would have been different, as the specific sequence of questions may have led respondents to answer a particular way. If he had randomized the order of questions instead, the effects of specific sequences of questions could have been netted out across the sample.⁵⁴ However, no such randomization was used in the Keegan Study.

43. Moreover, because only respondents who were not considered “misinformed” in earlier questions could move forward, there is selection bias. Respondents who got questions “correct” are potentially different on average from respondents who got earlier questions wrong, especially because answering questions is not a random process. Therefore, it is possible that these respondents would have responded differently on average when compared to respondents who answered the later questions. One might think that because respondents who answered earlier questions right would continue to be right and conversely the respondents who answered earlier questions wrong would continue to be wrong. However, this cannot simply be assumed. Respondents may have different understandings when it comes to knowledge about data collection. Therefore, selection bias may have skewed the results one way or another. The best example of this is that as discussed in **Section IV.C**, a greater share of respondents in later questions selected “Don’t

reduce the potential for inadvertent priming within a survey, researchers often carefully consider decisions about question order, wording, and format.” Parkin, Michael, “Priming,” in *Encyclopedia of Survey Research Methods*, Vol. 1 and 2., 2008, Sage Publications., pp. 611-612, p. 612.

⁵⁴ Mr. Keegan is aware of such bias. “In this study, randomization was used wherever possible to minimize the potential for order bias.” (Keegan Rebuttal Report, ¶ 152). However, he failed to produce the survey instrument with detailed programming instruction. Based on his report text, it is unclear how he implemented the randomization, and/or which questions utilized such randomization.

know.” This means that the sample in later questions is composed of a greater proportion of people who made it through simply by being uncertain about their answers.

B. Mr. Keegan’s Survey Questions Suffer from Recall Bias

44. Mr. Keegan’s main questions require respondents to recall and reflect on prior experience over “the last five years,” which subjects respondents’ answers to recall bias.⁵⁵ Recall bias occurs when respondents are unable to correctly recall events over the reference period.⁵⁶ For example, in Q15, Mr. Keegan’s survey asked, “Please think of the time(s) that you have used private browsing mode to browse the Internet in the last five years. Which of the following best reflects your understanding?”⁵⁷ Five years is a long period of time over which to recall every instance of private browsing mode use. Such a long period of recall may prime respondents to think differently about the question or take mental shortcuts to reduce the cognitive burden, which means it is more likely for recall bias to affect the results.⁵⁸

⁵⁵ Keegan Rebuttal Report, Exhibit 4–Keegan Study–Questionnaire.

⁵⁶ “[I]t is important to note that recall aids can only be effective for material that was encoded in memory.” Krosnick, J.A. and Stanley Presser. “Question and Questionnaire Design,” in *Handbook of Survey Research*, J.D. Wright and P.V. Marsden, Second Edition, 2010, Elsevier, pp. 263-313 (“Krosnick and Presser (2010)”), p. 288; Spencer E.A., et al., “Recall Bias,” 2017, *Catalogue of Bias*, available at <<https://perma.cc/VUE6-2FJU>>, accessed on June 27, 2022 (“Catalogue of Bias (2017)”).

⁵⁷ Keegan Rebuttal Report, Exhibit 4–Keegan Study–Questionnaire.

⁵⁸ “Accuracy [of recall] may also be increased by reducing the burden of the task respondents are asked to perform. This can be done by simplifying the task itself or by assisting the respondent in carrying it out. One common way of simplifying the task is to shorten the reference period. Respondents will have an easier time recalling how often they have seen a physician in the last month than in the last year, and it is easier to recall time spent watching television yesterday than last week.” Krosnick and Presser (2010), p. 289. See Tversky, Amos and Daniel Kahneman, “Judgment under Uncertainty: Heuristics and Biases,” *Science*, Vol. 185, No. 4157, 1974, pp. 1124-1131, p. 1124.

C. Mr. Keegan’s Questions Were Unclear and He Did Not Provide Respondents with Sufficient Information to Answer Them

45. The Keegan Study included unclear questions with undefined terminology and confusing question structure. According to fundamental survey principles, “[w]hen unclear questions are included in a survey, they may threaten the validity of the survey by systematically distorting responses if respondents are misled in a particular direction, or by inflating random error if respondents guess because they do not understand the question.”⁵⁹ Survey questions should avoid the use of ambiguous words that can be interpreted differently by different respondents as such “vague questions open to interpretation often result in less-than-useful data.”⁶⁰
46. Critically, Mr. Keegan did not present definitions for the terminology in his questions and answer options. For example, in Q20, he presented a list of eight types of information (*e.g.*, URL information, HTTP information, cookies), and asked “[w]ould you or would you not expect Google to collect and save each of the following types of information about your Internet browsing behavior during your private browsing mode session” without ever defining the eight “following types of information.”⁶¹ Other questions in the Keegan Study used ambiguous terminology without clarification (*e.g.*, “collect and save” and “Internet browsing activity”).⁶² By using unclear questions riddled with ambiguous and undefined terminology, Mr. Keegan’s data cannot be relied upon.

⁵⁹ Diamond (2011), p. 388.

⁶⁰ Malhotra (2006), p. 89; Sullivan, Gail M, and Anthony R. Artino Jr., “How to Create a Bad Survey Instrument,” *Journal of Graduate Medical Education*, Vol. 9, No. 4, 2017, pp. 411-415 (“Sullivan and Artino (2017)”), pp. 411-412.

⁶¹ Keegan Rebuttal Report, Exhibit 4–Keegan Study–Questionnaire.

⁶² Keegan Rebuttal Report, Exhibit 4–Keegan Study–Questionnaire.

47. Further, each of Q15, Q16, Q17, Q19, and Q20 are so-called “doubled-barreled” questions. A double-barreled question is a question that requires the respondent to choose which part of question to answer, especially if they have differing answers to each part.⁶³ Mr. Keegan’s Q15, Q16, Q17, Q19, and Q20 all ask about whether respondents expect Google to “collect and save” information or whether respondents believe they have provided consent to Google to “collect and save” information.⁶⁴ Including both the concepts of “collect and save” in the same question makes it a “double-barreled” question, which is a major flaw in survey design. I also note that in Keegan Study Q16 asks respondents beliefs about “collect,” while the answer options use “collect and save,”⁶⁵ creating additional confusion for respondents. Not only do double-barreled questions make it difficult for respondents to understand the question, but they also make it difficult to draw conclusions from the data (*e.g.*, what part of the results can be attributable to “collect” and what part of the results can be attributable to “save”?).⁶⁶ Moreover, as discussed in **Section IV.B**, respondents were only given binary answer options (*i.e.*, yes or no), plus a “Don’t know” or “Don’t know / No opinion” answer option. Respondents are forced into providing a single categorical answer for complex questions that ask about multiple concepts.

⁶³ Sullivan and Artino (2017), pp. 411-412; Malhotra (2006), p. 84.

⁶⁴ Keegan Rebuttal Report, Exhibit 4–Keegan Study–Questionnaire.

⁶⁵ Keegan Rebuttal Report, ¶ 173; See also Keegan Rebuttal Report, Exhibit 4–Keegan Study–Questionnaire.

⁶⁶ Sullivan and Artino (2017), pp. 411-412; Malhotra (2006), p. 84.

D. Mr. Keegan Failed to Disclose Documentation Required to Evaluate the Validity of His Survey and Failed to Employ Basic Quality Checks

48. Mr. Keegan did not provide “complete and detailed information” to allow an evaluation of the “trustworthiness of the survey,”⁶⁷ nor did he pretest or include follow-up questions to assess whether (i) respondents could understand the survey questions and terms or (ii) assess whether respondents had pre-existing knowledge that could have affected his survey results.
49. First, Mr. Keegan did not provide “complete and detailed information on all relevant characteristics” of the survey he conducted.⁶⁸ Specifically, Mr. Keegan did not provide programmer instructions (the instructions or “recipe” used to guide the person who implemented his survey online), nor did he provide the full set of data from all respondents that started his survey to demonstrate his screening and filtering procedures were properly implemented.⁶⁹ As there was insufficient “disclosure of the underlying data and documentation,” it is impossible to know whether Mr. Keegan’s survey “population was properly chosen and defined,” whether “the sample chosen was representative of that population,” and whether “the data gathered were accurately reported.”⁷⁰ Without key information such as programming instructions and the full data set including all

⁶⁷ Diamond (2011), p. 415.

⁶⁸ “The criteria for determining whether to include a potential respondent in the survey should be objective and clearly conveyed, preferably using written instructions addressed to those who administer the screening questions. These instructions and the completed screening questionnaire should be made available to the court and the opposing party along with the interview form for each respondent.” Diamond (2011), p. 387.

⁶⁹ Mr. Keegan failed to produce his “all starts” data, which contains observations who started the survey but were screened out from his final analytical sample. It is standard practice to produce such data, and without it, I am further hindered in verifying the quality of Mr. Keegan’s data.

⁷⁰ These are three of the four factors discussed in the evaluation of “Sampling/Opinion Surveys” in the *Manual for Complex Litigation*. *Manual for Complex Litigation*, fourth Edition, Federal Judicial Center, 2004, pp. 102-104, pp. 102-103.

respondents that started Mr. Keegan's survey, it is impossible to accept Mr. Keegan's survey as valid.⁷¹

50. Second, Mr. Keegan's question structure, as discussed above, is not simple or clear, and he did not do any pretesting to demonstrate that respondents understood the questions, terminology within the questions, and had answer options that allowed them to accurately answer the questions. Pretesting helps validate the survey and is recommended "as a way to increase the likelihood that questions are clear and unambiguous."⁷² Especially given the fundamental methodological flaws in his survey and question design, pretests would have been helpful to assess whether respondents understood his survey questions or had any difficulties with his survey. Findings from the pretests could have informed refinements to his survey, which is typical in survey-based research.⁷³ However, there is no such evidence of Mr. Keegan conducting any pretests.
51. Third, answers to open-ended questions could have surfaced respondents who had trouble accurately responding to the questions in the Keegan Study. Had Mr. Keegan asked any open-ended questions, he would have been able to conduct a sensitivity analysis by

⁷¹ "The completeness of the survey report is one indicator of the trustworthiness of the survey and the professionalism of the expert who is presenting the results of the survey. A survey report generally should provide in detail: 1. The purpose of the survey; 2. A definition of the target population and a description of the sampling frame; 3. A description of the sample design, including the method of selecting respondents, the method of interview, the number of callbacks, respondent eligibility or screening criteria and method, and other pertinent information; 4. A description of the results of sample implementation, including the number of a. potential respondents contacted, b. potential respondents not reached, c. noneligibles, d. refusals, e. incomplete interviews or terminations, and f. completed interviews; 5. The exact wording of the questions used, including a copy of each version of the actual questionnaire, interviewer instructions, and visual exhibits; 6. A description of any special scoring (e.g., grouping of verbatim responses into broader categories); 7. A description of any weighting or estimating procedures used; 8. Estimates of the sampling error, where appropriate (i.e., in probability samples); 9. Statistical tables clearly labeled and identified regarding the source of the data, including the number of raw cases forming the base for each table, row, or column; and 10. Copies of interviewer instructions, validation results, and code books." Diamond (2011), pp. 415-416.

⁷² Diamond (2011), p. 388.

⁷³ Diamond (2011), pp. 388-389.

removing respondents that indicated inattention, confusion, or litigation awareness in their open-ended responses. I note that Mr. Keegan provided a critique of my surveys, stating that certain responses indicated inattention.⁷⁴ He apparently sought to avoid similar criticism by failing to even ask respondents any question that could reveal confusion, and instead assumes that his survey respondents experienced no confusion without any evidence to support this assumption.⁷⁵

52. Finally, Mr. Keegan did not include follow-up questions about awareness of lawsuits on similar topics or previous surveys recently taken on similar topics. It is standard practice to include such questions to assess whether respondents may have prior knowledge of the topics tested in the survey.⁷⁶ Mr. Keegan's failure to determine whether the survey included or excluded respondents who may be aware of the purpose of the survey calls into question the objectivity of his approach, as it is easy to include follow-up questions that allow the researcher to remove respondents with litigation awareness and / or conduct sensitivity analyses to assess the validity of the results. Incredibly, Mr. Keegan claims that my studies were compromised by "Tainted respondents – lawsuit awareness" and "Tainted respondents – recent survey takers."⁷⁷ However, in his own study, he included no questions

⁷⁴ Keegan Rebuttal Report, ¶ 29. Sensitivity analysis that removes respondents that Mr. Keegan deemed as "low-quality" does not change the conclusion of the Amir Affirmative Report.

⁷⁵ Keegan Rebuttal Report, Exhibit 4–Keegan Study–Questionnaire.

⁷⁶ These questions are asked to allow the researchers to assess the existence and extent of the demand artifact. *See e.g.*, Simonson, Itamar and Ran Kivetz, "Demand Effects in Likelihood of Confusion Surveys: The Importance of Marketplace Conditions," *Trademark and Deceptive Advertising Surveys: Law, Science and Design*, eds. Shari Seidman Diamond and Jerre B. Swann, American Bar Association, 2012; Sawyer, A.G., "Demand Artifacts in Laboratory Experiments in Consumer Research," *Journal of Consumer Research*, Vol. 1, No. 4, March 1975, pp. 20-30, pp. 20-23.

⁷⁷ Keegan Rebuttal Report, ¶¶ 36-38. I conducted sensitivity analyses to ensure that my surveys' results were unaffected by respondents who were aware of the lawsuit or had recently taken a related survey. *See* Amir Affirmative Report, footnotes 78, 92, and 106. *See also*, "Consumer Perceptions and Expectations Survey Analysis.do"; "Interpretation Survey Analysis.do"; "Likelihood of Use Survey Analysis.do."

to address these issues and provided no evidence that he took other steps to address them despite running his studies within weeks of my own studies using the same survey vendor that I used, Dynata. Indeed, Mr. Keegan provided no evidence that he excluded respondents who had taken one of my Affirmative Studies.⁷⁸ Without any control measures to identify and remove respondents with prior knowledge, it is possible and even likely that Keegan Study contains “Tainted respondents – lawsuit awareness” and “Tainted respondents – recent survey takers,”⁷⁹ and because he did not ask any questions about those topics, they can neither be screened out, nor analyzed for sensitivity.

53. As Mr. Keegan failed to implement the most basic quality control protocols, his study is far more likely to contain tainted respondents that are impossible to identify precisely because he did not conduct any quality control measures. On top of this, Mr. Keegan’s incomplete survey report fails to provide the data required to evaluate whether his survey and the conclusions he draws from them should be trusted. Given these shortcomings, it is certain that Mr. Keegan’s own survey is “of dubious quality.”⁸⁰



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⁷⁸ Mr. Keegan’s survey was fielded from 5/3/2022-5/6/2022, which is well after my Affirmative Studies were fielded, from 3/16/2022-3/21/2022. Keegan Rebuttal Report, Exhibit 6–Keegan Study–Untabulated Data; Consumer Perceptions and Expectations Survey Data, fielded from March 16 to 21, 2022 (“2203704.xlsx”); Interpretation Survey Data, fielded from March 16 to 21, 2022 (“2203487.xlsx”); Likelihood of Use Survey Data, fielded from March 16 to 21, 2022 (“2203523.xlsx”).

⁷⁹ Keegan Rebuttal Report, pp. 12-14.

⁸⁰ Keegan Rebuttal Report, ¶ 53.

Exhibit 1.a**Mr. Keegan Could Have Chosen the Other Extreme to Define “Not Misinformed” and Generated Dramatically Different Results****“Not Misinformed” Respondents Defined as Respondents Providing “Informed” Answer or “Don’t know” Answer to any Question**

Question	Remaining Projected Respondents “Misinformed” in All Completed Questions Before this Question ^[1]	% of Respondents “Not Misinformed” in this Question in Keegan Study ^[2]	Projected Respondents “Not Misinformed” in this Question	Cumulative Projected Respondents “Not Misinformed”		Remaining Projected Respondents “Misinformed” in All Completed Questions After Answering this Question
	[A]	[B]	[C] = [A] * [B]	N ^[3]	% of Total Respondents	[F] = [A] - [C]
	<i>Projected</i>	<i>Actual % from Keegan Data</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
Q15						
Q16						
Q17						
Q19						
Q20						

Notes:

[1] Includes the group of projected respondents that has not provided an “informed” or “don’t know” answer to a question.” Starts with total respondents (1,052) and subsequently takes number of remaining projected respondents having provided “misinformed” answers in all completed questions (Column [F]).

[2] Based on Mr. Keegan’s survey data, shows the percentage of respondents that answered the given question who provided an “informed” answer or an answer of “Don’t know” or “Don’t know / No opinion.”

[3] Running sum of Column [C].

[4] Whether respondents are counted as “misinformed” in each question follows Mr. Keegan’s methodology. For example, respondents who answered “No, Google would not collect and save” for at least one item in Q20 are counted as “misinformed.”

[5] Analysis assumes that all respondents remaining after Q17 see Q19. In other words, it assumes that all remaining respondents indicate having a Google account in Q18.

Source:

Keegan Rebuttal Report, Exhibit 6–Keegan Study–Untabulated Data.

Exhibit 1.b**Mr. Keegan Could Have Chosen the Other Extreme to Define “Not Misinformed” and Generated Dramatically Different Results****“Not Misinformed” Respondents Defined as Respondents Providing “Informed” Answer to any Question**

Question	Remaining Projected Respondents “Misinformed” or “Don’t know” in All Completed Questions Before this Question ^[1]	% of Respondents “Not Misinformed” in this Question in Keegan Study ^[2]	Projected Respondents “Not Misinformed” in this Question	Cumulative Projected Respondents “Not Misinformed”		Remaining Projected Respondents “Misinformed” or “Don’t know” in All Completed Questions After Answering this Question
	[A] <i>Projected</i>	[B] <i>Actual % from Keegan Data</i>	[C] = [A] * [B] <i>Projected</i>	N ^[3] <i>Projected</i>	% of Total Respondents <i>Projected</i>	[F] = [A] - [C] <i>Projected</i>
Q15						
Q16						
Q17						
Q19						
Q20						

Notes:

[1] Includes the group of projected respondents that has not provided an “informed” answer to a question ” Starts with total respondents (1,052) and subsequently takes number of remaining projected respondents having provided “misinformed” or “don’t know” answers in all completed questions (Column [F])

[2] Based on Mr. Keegan’s survey data, shows the percentage of respondents that answered the given question who provided an “informed” answer

[3] Running sum of Column [C]

[4] Respondents are counted as “not misinformed” in each question only if they provided an “informed” answer to that question. For example, respondents who answered “Yes, Google would collect and save” for at least one item in Q20 are counted as “not misinformed,” but respondents who answered “Don’t know” for all items in Q20 are not

[5] Analysis assumes that all respondents remaining after Q17 see Q19. In other words, it assumes that all remaining respondents indicate having a Google account in Q18

Source:

Keegan Rebuttal Report, Exhibit 6–Keegan Study–Untabulated Data

APPENDIX A

CURRICULUM VITAE

On Amir

Rady School of Management
University of California, San Diego
Wells Fargo Hall
9500 Gilman Drive, MC 0553
La Jolla, CA 92093-0553
(858) 534-2023
oamir@ucsd.edu

Education

Ph.D., Management Science, Marketing, Massachusetts Institute of Technology
B.S., Computer Science, Israeli Open University, Tel Aviv

Academic Employment

2020 – present	Wolfe Family Presidential Endowed Chair in Life Sciences, Innovation, and Entrepreneurship, Professor of Marketing Rady School of Management, University of California, San Diego,
2018 - 2021	Associate Dean of Programs Rady School of Management, University of California, San Diego
2018 – 2020	Professor of Marketing Rady School of Management, University of California, San Diego
2010 – 2017	Associate Professor of Marketing Rady School of Management, University of California, San Diego
2012 – 2013	Visiting Associate Professor of Marketing Kellogg School of Management, Northwestern University
2011 – 2012	Visiting Professor of Marketing Arison School of Management, IDC
2005 – 2010	Assistant Professor of Marketing Rady School of Management, University of California, San Diego
2003 – 2005	Assistant Professor of Marketing School of Management, Yale University

Other Employment

2018 - present	Chief Behavioral Science Officer, Fiverr, Inc.
1991 – 1999	Israeli Air Force

Publications

- Kristen Duke & On Amir (forthcoming). The Importance of Selling Formats: When Integrating Purchase and Quantity Decisions Increases Sales, *Marketing Science*.
- Evan Weingarten, Kristen Duke, Wendy liu, Rebecca Hamilton, On Amir, Gil Apple, Moran Cerf, Joe Goodman, Andrea Morales, Ed O'Brian, Jordi Quidbach, & Monic Sun (forthcoming). What Makes People Happy? Decoupling the Experiential-Material Continuum, *Journal of Consumer Psychology*.
- Alicea Lieberman, Juliana Schroeder, & On Amir (forthcoming). A Voice Inside My Head: The Psychological and Behavioral Consequences of Auditory Technologies, Organization Behavior and Human Decision Processes.
- Alicea Lieberman, Andera Morales, & On Amir (forthcoming). Tangential Immersion: Increasing Consumer Persistence, *Journal or Consumer Research*.
- Coby Morvinski, Silvia Sacardo, & On Amir (forthcoming). Mis-Nudging Morality, *Management Science*
- Elanor Williams, Allie Lieberman, & On Amir (2021). Perspective Neglect: Inadequate Perspective Taking Limits Coordination, Judgment and Decision Making, 16 (4), 898-931.
- Weingarten, Evan, Michael W. Meyer, Amit Ashkenazi, & On Amir (2020). Experts Outperform Technology in Creative Markets, She Ji: The Journal of Design, Economics, and Innovation.
- Alicea Lieberman , Kristen Duke, & On Amir (2019). How Incentive Framing Can Harness the Power of Norms, Organizational Behavior & Human Decision Processes.
- Kristen E. Duke & On Amir (2019). Guilt Dynamics: Consequences of Temporally Separating Decisions and Actions, Journal of Consumer Research.
- On Amir, Nina Mazar, & Dan Ariely (2019). Replicating the Effect of Moral Standards Accessibility on Dishonesty, Author's Response to the Replication Process, Advances in Methods and Practices in Psychological Science.
- Raphael Thomadsen, Robert P. Roederkerk, On Amir, Neeraj Arora, Bryan Bollinger, Karsten Hansen, Leslie John, Wendy Liu, Aner Sela, Vishal Singh, K. Sudhir, & Wendy Wood (2018). How Context Affects Choice, Customer Needs and Solutions, 1-2, 3-14.
- Kristen Duke, Kelly Goldsmith, & On Amir (2018). Is the Preference for Certainty Always so Certain?, Journal of the Association of Consumer Research, 3(1), 63-80.
- Coby Morvinski & On Amir (2018). Liking Goes with Liking: An Intuitive Congruence between Preference and Prominence, Journal of Experimental Psychology: Learning, Memory, and Cognition.
- Daniella Kupor, Wendy Liu, & On Amir (2017). The Effect of an Interruption on Risk Decisions, Journal of Consumer Research, 44 (6), 1205–1219.

- Andrea Morales, On Amir, & Leonard Lee (2017). A Tutorial in Consumer Research: Keeping it Real in Experimental Research – Understanding When, Where, and How to Enhance Realism and Measure Consumer Behavior, Journal of Consumer Research, 44 (2), 465–476.
- Kerem Shuval, Tammy Leonard, Jeffrey Drope, David L. Katz, Alpa V. Patel, Melissa Maitin-Shepard, On Amir, & Amir Grinstein, (2017). Physical Activity Counseling in Primary Care: Insights from Public Health & Behavioral Economics, CA: A Cancer Journal for Clinicians, 67(3), 233-244.
- Coby Morvinski, On Amir, & Eitan Muller (2017). “Ten Million Readers Can’t Be Wrong!,” or Can They? On the Role of Information About Adoption Stock in New Product Trial, Marketing Science, 36(2), 290-300.
- On Amir and Orly Lobel (2014). How Non-Competes Stifle Performance, Harvard Business Review, 92 (1/2), p.26.
- On Amir and Orly Lobel (2013). Driving Performance: A Growth Theory of Non-Compete Law, Stanford Technology Law Review, 16 (3), spring.
- On Amir and Orly Lobel (2012). Liberalism and Lifestyle: Informing Regulatory Governance with Behavioral Research, European Journal of Risk Regulation, 1, 17-25.
- Kelly Goldsmith and On Amir (2010). Can Uncertainty Improve Promotions, Journal of Marketing Research, December, 1070-1077.
- Leonard Lee, On Amir, and Dan Ariely (2009). In Search of Homo Economicus: Cognitive Noise and the Role of Emotion in Preference Consistency, Journal of Consumer Research, 36, 173-187.
- Anastasiya Pocheptsova, On Amir, Ravi Dhar, and Roy Baumeister (2009). Deciding without Resources: Psychological Depletion and Choice in Context, Journal of Marketing Research, June, 46 (3), 344-355.
- On Amir and Dan Ariely (2008). Resting on Laurels: The Effects of Discrete Progress Markers as SubGoals on Task Performance and Preferences, Journal of Experimental Psychology: Learning, Memory, & Cognition, 34 (5), 1158-1171.
- On Amir and Orly Lobel (2008). Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy, Columbia Law Review, December, 2098-2138.
- Nina Mazar, On Amir, and Dan Ariely (2008). The Dishonesty of Honest People: A Theory of Self-Concept Maintenance, Journal of Marketing Research, November, 45 (6), 633-644, (lead article).
- *Media coverage: NY Times Science section (Nov. 20th, 2007)
- *HBR Breakthrough Ideas for 2008.
- *Winner of the 2012 William F. O’Dell award.
- Nina Mazar, On Amir, and Dan Ariely (2008). More Ways to Cheat – Expanding the Scope of Dishonesty, Journal of Marketing Research, November, 45 (6), 651-653.
- On Amir and Jonathan Levav (2008). Preference construction versus choice construction: The instability of preferences learned in context. Journal of Marketing Research, April, 145-158.

- On Amir, Ziv Carmon, and Dan Ariely (2008). The Dissociation between Monetary Assessments and Predicted Utility, Marketing Science, 27 (6), 1055-1064.
- On Amir and Dan Ariely (2007). Decisions by Rules: The Case of Unwillingness to Pay for Beneficial Delays. Journal of Marketing Research, February, 142-152.
- On Amir, Dan Ariely, Alan Cooke, David Dunning, Nicholas Epley, Botond Koszegi, Donald Lichtenstein, Nina Mazar, Sendhil Mullainathan, Drazen Prelec, Eldar Shafir, Jose Silva (2005). Behavioral Economics, Psychology, and Public Policy. Marketing Letters (Special Issue for the Sixth Choice Symposium), 16:3/4, 443-454.

Other Publications

- Alicia Lieberman, Andrea C. Morales, and On Amir (2019). Beyond the Lab: Using Data from the Field to Increase Research Validity, in Handbook of Research Methods in Consumer Psychology, Frank R. Kardes, Paul M. Herr, and Nobert Schwarz, Editors, Routledge.
- “Is the Mind like a Muscle?” Scientific American, Mind, online edition.
- “Making Consumption Decisions by Following Personal Rules”, In Inside Consumption: Frontiers of Research on Consumer Motives, Goals, and Desires. Ratti Ratneshwar & David Mick (eds.), Routledge Press 2005. (with Dan Ariely & Orly Lobel)
- On Amir & Ariely Dan (2001) e-Rationality: Rationality in Electronic Environments. In S.M. Broniarczyk, & K. Nakamoto, Advances in Consumer Research, 24. Provo, UT.
- On Amir (2004) Alternative Decision Processes in Consumption: Personal Rules, Rationales, and Identity Maintenance, Advances in Consumer Research, XXXI, 26.
-

Selected Research in Progress

- Goal Proximity, Social Information, and Giving: When Norms Backfire (with Coby Morvinski and Matt Lupoli) – revision invited Journal of Marketing
- The Entrenchment Effect (with Allie Lieberman and Ziv Carmon) – Under review at Journal of Marketing Research
- How Different Encoding Processes Influence Confidence (with Giulia Maimone and Uma Karmarkar) – Under review at Journal of Experimental Psychology: Learning, Memory, and Cognition
- The most Influential Age Hypothesis: Does the Self Cause Predictable Preferences (with Nina Mazar) – revision invited Management Science.
- Reference Escalation in Sequential Choice (with Coby Morvinski) – under review Marketing Science
- My Experience or My Expectations: The Effect of Expectations as Reference Points on Evaluations of Experiential Purchases (with Amar Cheema, Davide Proserpio, and Stephanie Tully) – under review Journal of Consumer Research.

Risk Aversion as Self Control (with Orly Lobel and Kelly Goldsmith)

Driving Pro-Environmental Choice (with Elizabeth A. Keenan and Ayelet Gneezy)

Risk Management for the Future: Age, Risk, and Choice Architecture (with Orly Lobel)

Honors and Awards

MSI Research Award: “Do Experts Outperform Artificial Intelligence? The Case of Logo Design,” # 4000657, 2019

MSI Research Award: “Quantity Integration,” #4000477, 2018

MSI Research Award: “New Product Adoption,” #4-1842, 2014

Robert Wood Johnson Foundation research grant for Healthy Choices.

MSI Junior Scholars 2009

“Most Valuable Professor Award,” voted by the Flex MBA class of 2007

“Most Valuable Professor Award,” voted by the Fulltime MBA class of 2007

MSI Research Award: “Motivating Discounts: Price Motivated Consumer Reasoning”, #4-1273, 2004

AMA - Sheth Doctoral Consortium Fellow, 2002

MSI Research Award: “Information Aversion: Indecision, Procrastination, and Consumer Choice Online”, #4-1141, 2001

CS Holding Fellowship, 2001

Walter A Rosenblith Fellowship, 2000

Conference presentations and Invited Talks

University of California, Berkeley, Haas (2015)

University of Toronto, Rotman (2015)

University of Southern California, Marshal (2014)

University of Southern California, Psychology (2013)

University of Pennsylvania, Wharton (2007, 2013)

University of Chicago, Booth (2013)

Northwestern University, Kellogg (2012)

Interdisciplinary Center, Arison (2011)

Tel Aviv University, Recanati, Coller (2008, 2009, 2018)

Stanford University, GSB (2009)

Columbia University, GSB (2009)

University of California, San Diego, Psychology (2005, 2006, 2007, 2008)

University of California, San Diego, Economics (2008)

Erasmus University (2008)

University of Melbourne (2007)

Hebrew University (2007)

Washington University, St. Louis (2007)

University of San Diego, School of Law (2006)

University of California, Los Angeles, Anderson (2004)
 Yale University, Psychology (2004)
 INSEAD (2004, 2015)
 Johns Hopkins University (2017)
 NUS (2018)
 Ben Gurion University (2018)
 HKU (2019)
 CUHK (2019)

Association for Consumer Research, 2001, 2003, 2004, 2006, 2007, 2013, 2015, 2016
 Society of Consumer Psychology, 2004, 2005, 2008, 2012, 2014, 2015, 2016, 2017
 Society for Judgement and Decision Making, 2003, 2005, 2006, 2011, 2015, 2016
 Behavioral Decision Making Research in Management, 2002, 2006, 2008, 2014, 2016, 2018
 FUR, IESE, 2008
 Marketing in Israel, 2002, 2003, 2005
 Northeastern Marketing Consortium 2003
 Collier Conference of Behavioral Economics 2017, 2019
 DMEP 2019

In the Media

Decision Making Traps and Tips for Negotiators, CIIAN, December, 2021
 2021's Best Things to Buy on Black Friday, WalletHub, November 19, 2021
 'That's not true.' San Diego doctors tackle COVID misinformation sown during county meeting.
 San Diego Union Tribune, October 6, 2021
 You could be one of three San Diegans who just won \$50,000 in the state's vaccine lottery. San
 Diego Union Tribune, June 4, 2021.
 California's vaccine incentives program – KPBS, May 2021.
 San Diego health systems ask for fewer vaccine doses, turn down extra amid supply glut. San
 Diego Union Tribune, May 10, 2021.
 2021's Best Pleaces for Valentine's Day. WalletHub, February 2, 2021.
 We're getting closer to having a Covid-19 vaccine. Hold onto that mask, though. San Diego
 Union Tribune, October 25, 2020
 Psychology of Pricing: How to Price you Products Effectively, The Do List, May 23, 2019
 The Celebrity of Legalized Cannabis, Pacific San Diego, May 20, 2019
 Marines may ditch 'The Few, the Proud' slogan, San Diego Union Tribune, October 11, 2016
 The free-shipping wars have begun, San Diego Union Tribune, October 2013
 The Young and The Promising, TheMarker magazine, 2011
 Consumer Emotional Reactions to Changing Gas Prices, Ch. 10 News, August 2008
 Jogging Down the Comeback Trail, San Diego Union Tribune, August 2007
 Big Business and the Consumer, Jeremy Seville Comedy Hour, WealthTV 2007
 Social Marketing, San Diego Union Tribune, May 2007
 Trends in E-commerce, San Diego Business Journal, July 2006
 Dating websites, San Diego Union Tribune, April 2006
 Database marketing, Campus Technology, November 2005

Christmas shopping, Hartford Courant, December 2004

Service

PhD Committee

Uzma Khan, Yale SOM, 2005
 Michael Liersch, UCSD Psychology, 2007
 Elizabeth Keenan, UCSD, 2015
 Coby Morvinski, UCSD, 2015 (Chair)
 Charles Lin, UCSD Economics, 2015
 Kristen Duke, UCSD (Chair)
 Alicea Lieberman, UCSD (Chair)

Conferences

Program committee for: SCP, ACR, BDRM, SJDM
 Conference Chair: SCP 2017

Reviewer

Journal of Marketing Research
 Marketing Science
 Journal of Experimental Psychology: General
 Journal of Economic Psychology
 Journal of Consumer Research
 American Economic Review
 Journal of Consumer Psychology
 Memory and Cognition
 Psychology and Marketing
 Cognition
 Journal of Behavioral Decision Making
 Organizational Behavior and Human Decision Processes
 Psychological Science
 Journal of Personality and Social Psychology
 Management Science
 Journal of Economic Behavior and Organizations
 Science

Member

Association for Consumer Research
 Association for Consumer Psychology
 Society for Judgment and Decision Making
 American Psychological Society
 American Marketing Association

Teaching Experience

Marketing Management (MBA, Executive)
Analytics in the wild (MBA, Executive)
Consumer Behavior (MBA, Executive)
Market Research (MBA, Executive)
Social Psychology (teaching fellow, Harvard)
E-Commerce Strategy (Executive)
Data Driven Decision Making (Executive)
Customized Executive Programs
Pricing (Executive)
Lab to Market (MBA, Executive)
Intro to Business (Graduate)
Branding (Executive)

Consulting and Executive Teaching Experience

Electronic Arts, HP Inc., Fiverr, Illumina, AAA, USAI, Cubic Corporation, Zimmer Dental, Life Technologies / Thermo Fisher, Intuit, WellBeat, Keiser Permanente, HP Software, Sony Entertainment, Applied Biosystems, Kumbaya App, Joyned, Marble, Themis-Tech.

APPENDIX B

PRIOR TESTIMONY

Prior Testimony

Town of Apple Valley v. Apple Valley Ranchos Water Company, Case No. CIV-DS-1600180, California Superior Court, San Bernardino. Retained by defendant. Deposed.

Arechiga v. Kellwood Company/Vince LLC, Case No. BC500988, Superior Court of California, County of Los Angeles. Retained by defendant. Deposed.

San Diego County Credit Union v. Citizens Equity First Credit Union, Case No. 3:18-CV-00967- GPC-MSB, United States District Court, Southern District of California. Retained by defendant. Deposed & court testimony.

Yamagata v. Reckitt Benckiser LLC, Case No. 3:17-cv-03529-VC, United States District Court, Northern District of California. Retained by defendant. Deposed.

Warner Records, Inc., et al. v. Charter Communications, Inc., Case No. 1:19-cv-00874, United States District Court, District of Colorado. Retained by plaintiffs. Report submitted. Deposed.

BBK Tobacco & Foods, LLP, an Arizona, limited liability partnership, d/b/a HBI International, v. Central Coast Agriculture, Inc., a Delaware corporation, Case No. CV-19-05216-PHX-MTL, United States District Court, District of Arizona. Retained by plaintiff. Report submitted. Deposed.

APPENDIX C

MATERIALS RELIED UPON

APPENDIX C

Materials Relied Upon

Legal Documents

Expert Report of Mark Keegan: Rebuttal of Expert Report of Professor On Amir, *Chasom Brown, et al., Plaintiffs v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, May 20, 2022 (and Materials Cited Therein)

Rebuttal Report of Professor On Amir, *Chasom Brown, et al., Plaintiffs, v. Google LLC, Defendant*, United States District Court, Northern District of California – Oakland Division, No. 5:20-cv-03664-YGR, May 20, 2022 (and Materials Cited Therein)

Bates-Stamped Documents

GOOG-BRWN-00042388-2418

Academic Literature

Bearden, William O. and Michael J. Etzel, “Reference Group Influence on Product and Brand Purchase Decisions,” *Journal of Consumer Research*, 1982, pp. 183-194

DeVellis, Robert F., and Carolyn T. Thorpe, “Scale Reliability” in *Scale Development: Theory and Applications*, 5th edition, 2021, Sage Publications, pp. 33-70

Grosso, Monica, et al., “What Information Do Shoppers Share? The Effect of Personnel-, Retailer-, and Country-Trust on Willingness to Share Information,” *Journal of Retailing*, 2020, pp. 524-547

Lee, Chan J., “The Test Taker’s Fallacy: How Students Guess Answers on Multiple-Choice Tests,” *Journal of Behavioral Decision Making*, 2018, pp. 1-12

Malhotra, Naresh K., “Questionnaire Design and Scale Development,” in *The Handbook of Marketing Research*, Grover, Rajiv and Marco Vriens, eds., 2006, Sage Publications, pp. 83-94

National Research Council, *Cognitive Aspects of Survey Methodology: Building a Bridge Between Disciplines*, Washington, DC: The National Academies Press. 1984, pp. 1-176

Parkin, Michael, “Priming,” in *Encyclopedia of Survey Research Methods*, Vol. 1 and 2., 2008, Sage Publications, pp. 611-612

Sheng, Hong, et al., “An Experimental Study on Ubiquitous Commerce Adoption: Impact of Personalization and Privacy Concerns,” *Journal of the Association for Information Systems*, 2008, pp. 344-376

Simonson, Itamar and Ran Kivetz, “Demand Effects in Likelihood of Confusion Surveys: The Importance of Marketplace Conditions,” *Trademark and Deceptive Advertising Surveys: Law, Science and Design*, eds. Shari Seidman Diamond and Jerre B. Swann, American Bar Association, 2012

Smith, Jeff H., et al., “Information Privacy: Measuring Individuals’ Concerns About Organizational Practices,” *Management Information Systems Research Center of the University of Minnesota*, 1996, pp. 167-196

Sullivan, Gail M., and Anthony R. Artino Jr., “How to Create a Bad Survey Instrument,” *Journal of Graduate Medical Education*, Vol. 9, No. 4, 2017, pp. 411-415

Tan, Seref, “Misuses of KR-20 and Cronbach’s Alpha Reliability Coefficients,” *Education and Science*, Vol. 34, No. 152, 2009, pp. 101-112

Thomadsen, Raphael, et al., “How Context Affects Choice,” *Customer Needs and Solutions*, 5(1-2), 2018, pp. 4-15

Turow, Joseph, et al., “Consumers’ Understanding of Privacy Rules in the Marketplace,” *Journal of Consumer Affairs*, Vol. 42, No. 3, 2008, pp. 411-424

Tversky, Amos and Daniel Kahneman, “Judgment under Uncertainty: Heuristics and Biases,” *Science*, Vol. 185, No. 4157, 1974, pp. 1124-1131

Other Publicly Available Sources

Spencer E.A., et al., “Recall Bias,” 2017, *Catalogue of Bias*, available at <<https://perma.cc/VUE6-2FJU>>, accessed on June 27, 2022
 “ci — Confidence intervals for means, proportions, and variances,” *Stata.com*, available at <<https://www.stata.com/manuals/rci.pdf>>